

MINISTRY OF WORKS

BUILDING APPRENTICESHIP
AND
TRAINING COUNCIL

FINAL REPORT



LONDON

HER MAJESTY'S STATIONERY OFFICE

1957

BUILDING APPRENTICESHIP AND TRAINING COUNCIL

LIST OF MEMBERS

Chairman

SIR FREDERICK LEGGETT, K.B.E., C.B.

Employers' Representatives

The National Federation of Building Trades Employers	Mr. W. H. FORSDIKE,
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	Mr. HARVEY G. FROST,
	C.B.E.
	Mr. S. G. GIBSON
	Mr. G. A. HILL, O.B.E.
	Mr. I. ERNEST JONES
	Mr. H. PAYNE
	Mr. B. RIPLEY
	Mr. J. C. ROBERTSON,
The Scottish National Building Trades Federation	O.B.E.
	Mr. F. M. SLEEMAN,
	C.B.E.
The Federation of Civil Engineering Contractors	Mr. G. O. SWAYNE
	Mr. A. C. V. TELLING
	Mr. D. MCCOWAN HILL,
Plumbing Trades National Apprenticeship Council	O.B.E.
	Mr. ROBERT SMITH
	Sir GEORGE M. BURT,
National Joint Council for the Mastic Asphalt Industry	K.B.E.
	Mr. V. HOLLOWAY
	Mr. R. V. COOPER
	Mr. F. C. WOOD

Operatives' Representatives

The National Federation of Building Trades Operatives	<i>England and Wales</i>
	Sir RICHARD COPPOCK,
	C.B.E.
	Mr. W. COTTER, O.B.E.
	Mr. A. DUNN
	Sir LUKE FAWCETT,
	O.B.E.
	Mr. S. HORSFIELD,
	O.B.E.
	Mr. H. KELLY, O.B.E.
	Mr. G. H. LOWTHIAN,
	M.B.E.
	Mr. J. F. McDERMOTT
	Mr. S. D. McKELVEY,
	C.B.E.
	Mr. J. H. MILLS
	Mr. J. WHITTAKER,
	M.B.E.
	Mr. H. WEAVER

The National Federation of Building Trades Operatives (<i>contd.</i>)	<i>Scotland</i> Mr. C. C. BROWNIE, M.B.E.
Civil Engineering Construction Conciliation Board	Mr. J. ARMSTRONG, O.B.E. Mr. H. E. MATTHEWS, O.B.E.
Plumbing Trades National Apprenticeship Council	Mr. A. E. SOONES
National Joint Council for the Mastic Asphalt Industry	Mr. F. V. JENKIN

Representatives of Professional Institutions

Royal Institute of British Architects	Mr. ROMILLY B. CRAZE, F.R.I.B.A.
Institution of Civil Engineers	Mr. F. S. SNOW, O.B.E.
Institution of Municipal and County Engineers	Mr. J. L. BECKETT
Institution of Structural Engineers	Mr. D. A. G. REID
Royal Institution of Chartered Surveyors	Mr. A. PRICHARD

Educational Representatives

Association of Principals of Technical Institutions	Mr. A. W. GIBSON, O.B.E.
Education Committee of Local Authorities in England and Wales	Mr. H. S. MAGNAY
Educational Bodies in Scotland	Sir GARNET WILSON

Members Elected by the Council

Major-General C. LLOYD,
C.B., C.B.E.
Mr. E. J. RIMMER, Q.C.
Sir GRAHAM SAVAGE,
C.B.

Representatives of Government Departments (in an advisory capacity)

Ministry of Education	Mr. J. R. NEWMAN BOOTH Mr. J. GIBSON
Ministry of Housing and Local Government	Mr. V. D. LIPMAN
Ministry of Labour and National Service (Central Youth Employment Executive)	Mr. C. B. MCALPINE, C.B.E.
Department of Health for Scotland	Mr. G. M. FAIR
Scottish Education Department	Mr. F. M. M. GRAY
Ministry of Works	Mr. F. BATH Mr. F. K. STEWART

Secretary of the Council: Mr. J. C. COX, O.B.E., M.S.M. (until 31st March, 1956).
Mr. W. C. ORR, O.B.E. (1st April to 16th July, 1956).

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16th July, 1956

To: THE RIGHT HON. PATRICK BUCHAN-HEPBURN M.P.,
Minister of Works

Sir,

On behalf of the Council I submit for your consideration their fifth and final report.

The Council was appointed by your predecessor the late Lord Portal, in 1943. After 13 years, they now lay down their task confident in the knowledge that building apprenticeship and training have been established on a firm foundation and that the work they have attempted to do in reviewing apprenticeship schemes and observing and advising on matters of recruitment, education and training will be continued by the building industry.

While the Council have been proud to record in their several reports the solid progress achieved over the years, they nevertheless recognise that there remain many and varied problems in this field which call for detailed and continuous study. They are sure that this work will be tackled by the industry with energy and enthusiasm.

I have the honour to be, Sir,
Your obedient Servant,

F. W. LEGGETT,
Chairman.

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BUILDING APPRENTICESHIP AND TRAINING COUNCIL

FINAL REPORT

Establishment of the Building Apprenticeship and Training Council

1. The Building Apprenticeship and Training Council was appointed by the Minister of Works in 1943 and entrusted with the duty of observing and advising on all matters concerning the recruitment, education and training of young persons for craftsmanship and management in the building industry and of encouraging the development of apprenticeship schemes on a comprehensive basis. Sir Malcolm Trustram Eve, Bart., was appointed the first independent Chairman of the Council and he was succeeded by Sir George Gater, G.C.M.G., K.C.B., D.S.O., in 1947. On his resignation in 1953 the present Chairman, Sir Frederick Leggett, K.B.E., C.B., was appointed.

2. The membership of the Council has included representatives from the following national industrial organisations and professional institutions concerned with the building and civil engineering industries as well as educational bodies and officials from various Government Departments:

EMPLOYERS' REPRESENTATIVES

The National Federation of Building Trades Employers
The Scottish National Building Trades Federation (Employers)
The Federation of Civil Engineering Contractors
Plumbing Trades National Apprenticeship Council
National Joint Council for the Mastic Asphalt Industry

OPERATIVES' REPRESENTATIVES

The National Federation of Building Trades Operatives
Civil Engineering Conciliation Board
Plumbing Trades National Apprenticeship Council
National Joint Council for the Mastic Asphalt Industry

REPRESENTATIVES OF PROFESSIONAL INSTITUTIONS

Royal Institute of British Architects
Institution of Civil Engineers
Institution of Municipal and County Engineers
Institution of Structural Engineers
Royal Institution of Chartered Surveyors

EDUCATIONAL REPRESENTATIVES

Association of Technical Institutions
Association of Principals of Technical Institutions
Association of Teachers in Technical Institutions
Education Committees of Local Authorities in England and Wales
Educational Bodies in Scotland

Ministry of Works
 Ministry of Education
 Ministry of Housing and Local Government
 Ministry of Labour and National Service
 Department of Health for Scotland
 Scottish Education Department

3. In addition three independent members of outstanding experience have been elected by the Council; one of these has been a representative of the City and Guilds of London Institute.

4. When the Council was appointed, as announced in the Government White Paper Cmd. 6428, issued in February 1943, on Training for the Building Industry, the Ministry of Works was responsible for providing the Secretariat and financing the Council, but in January 1953 arrangements were made for work in connection with the registration of apprentices to be taken over by the National Joint Council for the Building Industry and in Scotland by the General Council Administering the Apprenticeship Scheme of the Building Industry in Scotland. In April 1955 the remaining executive functions which B.A.T.C. had hitherto performed were similarly transferred to the industry. Despite the administrative difficulties inseparable from such a change-over this transfer of duties was carried through smoothly and effectively.

Current Reference to the Council

5. In 1955 the Minister of Education and the Secretary of State for Scotland announced a programme for expanding technical colleges and increasing the number of courses of training available to industry. It was stated that this development in educational facilities would be of significance in relation to training arrangements in the industry, and the Council was asked by the Minister of Works to review the educational and training needs of the industry in the light of present and future developments in technical education. In carrying out this task the opportunity has been taken of reviewing the work of the Council.

Recruitment of Apprentices

6. On the assumption that the building industry would require 500,000 craftsmen, it was estimated in 1943 that it would be necessary to bring into the industry each year between 15,000 and 20,000 apprentices to make good the wastage by death and illness and without any supplement to the depleted labour force. That would have given a total apprenticeship strength of from 75,000 to 100,000 on the basis of five years' apprenticeship.

7. In its Second Report the Council analysed the recruitment needs of the immediate post-war years from the standpoint of replenishing the normal wastage among craftsmen. It assumed that the yearly wastage would be about 4 per cent, and that to maintain a force of 625,000 craftsmen and apprentices an annual recruitment of 25,000 apprentices was required.

8. The Council considered that all employers should play their part in recruiting apprentices, but in the past there had been some disinclination to do so even by members of the industry who were anxious to see a well-trained body of craftsmen. The Council realised that some businesses were not well suited to train apprentices, either because employers could not provide facilities, or because suitable craftsmen could not be spared to train the boys.

9. In a Special Report on Recruitment and Training issued in November 1948, the Council reassessed the total number of craftsmen required at 550,000 but considered that 4 per cent might still be regarded as a reliable estimate of the wastage, and substituted 22,000 for the previous estimate of 25,000 as the annual number of fresh apprenticeships required. Although there were difficulties in assessing the needs of the various crafts in relation to the total required, it was felt there were advantages in making estimates which, though tentative, would serve as a yardstick by which success in recruitment might be measured. These estimates have been fixed in relation to the number of apprentices shown as being employed by building and civil engineering employers in the annual returns obtained by the Ministry of Works, but any breakdown of the national figures involved such complications that it was decided the figures should not be published. It was felt, however, that the summaries would be useful to Regional Joint Apprenticeship Committees in connection with their examination of specific area problems on recruitment and a limited and confidential circulation was carried out.

10. The merit of estimates for recruitment purposes is related to the proper use of such yardsticks. An estimate should act as an incentive to further action, but where it suggests an abnormal position in relation to what is possible it can act as a deterrent. This point has received attention in certain areas and it seems likely that a broad assessment of the circumstances affecting each region and the experience of recent years is the best guide to a recruitment programme.

11. From their constant review of this problem the Council is satisfied that there is advantage in providing some assessment of the number of new entrants required, and invites the industry to continue this periodic review.

Statistics

12. In the Special Report on Recruitment and Training the Council recommended that adequate statistics on apprenticeship should be made available and kept up to date. This recommendation was accepted by the Ministry of Works, and returns have been collected annually from all building and civil engineering employers under the provisions of Defence Regulations 56 A.B. These arrangements, which operated from August 1949, required employers to give particulars of the number of apprentices undergoing training in the various crafts both nationally and regionally, and the number of apprentices recruited during the preceding 12 months. This information was originally obtained under the Defence Regulation. Records of registrations are obtained by the National Joint Apprenticeship Board, but in view of the importance of comprehensive statistics, particulars relating to apprenticeship generally are obtained annually from employers by the Ministry of Works.

13. Particulars are shown in Appendix 6 which were obtained from Censuses taken by the Ministry of Works of the total number of craftsmen and apprentices employed in 19 trades covered by returns furnished by building and civil engineering employers. Analyses by crafts are given for May 1954 and September 1955.

The National Apprenticeship Scheme

14. After reviewing all kinds of apprenticeship schemes which claimed to be of a national character, and about which information could be obtained, the Council recommended provisions desirable in all apprenticeship agreements.

These recommendations were accepted by the national apprenticeship bodies in Great Britain.

Registration under the National Apprenticeship Scheme

15. With the establishment of the National Apprenticeship Scheme it was agreed that there should be registration of the indentured apprenticeships with the Council. It was regarded as essential that there should be a record of all the boys undergoing courses of training and that there would be advantages in establishing a national register which would entitle boys to become enrolled when their conditions of training conformed to approved conditions. The particulars were registered by the Council without payment but on completion of apprenticeship a certificate was issued on the payment of a fee of 10s.

16. These arrangements were continued by the Council until January 1953, when the registration work was taken over by the National Joint Apprenticeship Board and the General Council Administering the Apprenticeship Scheme of the Building Industry in Scotland, and the fee then became payable at the initial stage of registration since registration with the Council had revealed a considerable gap between the number of apprentices who completed their training and those who paid the requisite fee of 10s. and made application for a completion certificate.

17. Particulars relating to the whole of the registration scheme are shown in Appendix 7.

The Administration of the National Apprenticeship Scheme for the Building Industry

18. The arrangements made for the National Apprenticeship Scheme provided that regional and local Joint Apprenticeship Committees of employer and operative representatives should be set up to administer the scheme under the National Joint Apprenticeship Board. These Committees were entrusted with the control of recruitment of apprentices and were responsible for reviewing the facilities provided by the local education authorities for building craft apprentices in the light of the standards of education and training required by the National Joint Apprenticeship Board under the apprenticeship deed. It was thus provided that there should be local supervision of craft training, both as regards the practical work with an employer and the facilities for technical education which, under the apprenticeship scheme, form an essential supplement to the practical training.

19. In the Council's Special Report on Recruitment and Training it was recommended that the industry should keep these local apprenticeship arrangements under close review. It was also recommended that local representatives of the Youth Employment Service, and the educational bodies, should be co-opted as assessors to Joint Apprenticeship Committees.

20. The continued success of the National Apprenticeship Scheme is to a great extent dependent on the understanding of local and individual circumstances by these Joint Committees not less than by their co-operation and goodwill. Their activity has been facilitated by close liaison being maintained with all concerned in training, education and vacancy aspects of the industry, including the Youth Employment Committees, and by a clear understanding of the position of the building industry in the industrial life of the area. The information on all aspects of local requirements, vacancies, and facilities for

training, if maintained in convenient record form can, together with the experience of individual Committee members, provide a sound basis for comparative and continuous study.

21. Regular local meetings, attended by educational representatives co-opted to assist the industrial members on the broader issues related to their problems, also contribute to the success of the scheme. Such continuous activity demonstrates the interest taken by the industry in the progress of the boys in training, and acts as a stimulus to employers and technical colleges in the efforts they make to meet the requirements of the national scheme and complete the apprenticeship training.

Apprentice Master Scheme

22. When the Council commenced its work the existing war-time conditions were not favourable for the engagement of building apprentices in large numbers, but it was vital that all possible steps should be taken to build up a trained craft labour force in order to carry out the large volume of post-war work. There existed, however, a serious economic factor because sufficient new work of a suitable character could not be licensed to attract an increasing number of apprentices to enter the industry. The Council recommended to the Minister of Works that the Government should, as a policy of urgency, launch a scheme based on the principle of apprentices erecting buildings under the guidance of craftsmen capable of acting as instructors, and that financial assistance should be provided to cover the cost of the training. It was proposed that a contract should be entered into by a local authority with a contractor who should become an apprentice master. In order that local authorities might be encouraged to operate this scheme for building new houses and repairing houses damaged by enemy air action (work for which they were responsible) the Government agreed to reimburse them in respect of the excess over normal cost attributable to the use of apprentices. Where a project under the scheme was to operate on a site remote from their homes the Ministry of Labour and National Service undertook to provide for the boys a scale of maintenance grants which would help them during the period of engagement as their apprenticeship wages were insufficient to meet the necessary expenses in getting to distant work. The scheme started on 12th April, 1945.

23. Boys who had received pre-apprenticeship training were considered specially suitable for engagement, although there was no scarcity of other boys who desired to train for building crafts. The scheme provided that the boys should be given an introduction to the general requirements of building before selection was made of a specific craft. When a craft had been chosen every facility was given for developing the skill needed to meet all its requirements. Although prefabricated units in the developing modern trend in the industry were used in the construction of these houses, the boys were given the opportunity of making various units so that they might be conversant with the whole range of craft demands, although this hand production inevitably slowed up the output and added in some measure to cost as compared with normal contract work.

24. There were, of necessity, variations in the measure of success of the projects operated under the scheme, and in some cases exceptional problems were involved, including sites allotted by local authorities with unusual difficulties. But the general opinion was that the exceptional opportunities provided

by the scheme for gaining experience and exercising responsibility gave the boys a better start in the industry than some might normally get in apprenticeship. They were employed from the beginning on production work and were able to watch their own progress, which, with differing degrees of success, was brought about by their own effort. All this work, carried out by the apprentices themselves, under the careful guidance of experienced and chosen craftsmen, became a thrilling adventure and fostered a pride in craftsmanship which was reflected in very low maintenance charges after a building was handed over on completion. The enthusiasm evinced by local authorities, Joint Apprenticeship Committees, and employers who carried out the contracts had a marked effect on the zeal of the apprentices and on the success achieved.

25. The number of boys anxious to join the scheme was frequently in excess of the capacity to engage them, and owing to the difficulties in readjustment in the industry after the war in some areas, particularly in Wales, difficulty was experienced in finding suitable vacancies for normal apprenticeship on completion of a period of training. This led to certain extensions of projects with consequent increased earning rates of apprentices, and resulted in the excess cost being higher than would otherwise have been the case. The difficulties which arose in obtaining an adequate number of normal apprenticeships were met by extensions of projects in some areas, and in other cases by the transfer of boys to other convenient projects. Thus in various ways the training received under the scheme was safeguarded and boys were not lost to the industry. The scheme continued until 1952 but was then brought to a close owing to the need for economy.

26. The scheme is regarded as having been a most admirable means of training apprentices, giving them a sound insight into craft requirements and producing excellent workers with reliability and breadth of outlook. The quality of the training and the high standard of the houses built have left a lasting impression in the areas concerned. From the subsequent success of these boys in the industry, it is clear that they have made a valuable addition to the craft force, and their work on the scheme made a sound contribution to the country's housing needs at a time when the demand for accommodation was very urgent. The Council desires to place on record its appreciation of the valuable work performed by the employers who acted as apprentice masters. Paragraph 85 contains a suggestion which if adopted would enable this type of training to become a permanent feature of the industry.

27. Particulars are given in Appendix 9 of the projects which were operated under the scheme. These projects were mainly in connection with the erection of new houses although there were a few contracts for the repair of bomb-damaged dwellings. The scheme operated throughout England and Wales and covered the areas of 116 local authorities. Over 3,000 houses and several other buildings were erected, and 7,500 boys received their pre-apprenticeship and initial training as apprentices on the scheme, and were subsequently transferred to indentured apprenticeship in the industry.

Non-indentured Learners

28. Some employers engage boys and give them certain training leading to craft ability and status without subscribing to the requirements of the National Apprenticeship Scheme by entering into formal agreement by way of indenture. The arrangements vary, and while they do not conform to the National

Apprenticeship Scheme it is claimed that many of the individual arrangements fall only a little way short of the national requirements. The number of these cases in relation to the total number of persons required by the industry makes it desirable that some consideration should be given to them.

29. Under the National Apprenticeship Scheme it is required that all boys learning a craft in the building industry shall enter into a written agreement of apprenticeship which shall be the standard deed of apprenticeship issued by the National Joint Council for the Building Industry. The Ministry of Labour and National Service considers deferment of National Service on an individual basis, and a deed of apprenticeship is clear evidence that an authorised form of training is being pursued. The deed requires attendance at a technical college for day-release instruction and co-operation is thereby assured with the education authority in regard to the provision of technical education. A deed of apprenticeship makes the position of all concerned clear.

30. The absence of a written agreement, even in those cases where verbal arrangements are favourable, is liable to result in attendance at technical classes becoming spasmodic and subject to being influenced by the convenience of the employer and by the requirements of his contracts. The provision of facilities at the colleges, in terms of accommodation, equipment and teaching staff, must necessarily be related to the numbers of students attending and, in view of competing industrial demands on limited accommodation, as well as the cost involved, it is inevitable that irregular attendance will have an unfortunate effect on the extent of the educational facilities available to the industry. While recognising the great efforts already made to secure universal adoption of the National Deed of Apprenticeship, the Council urges both sides of the industry to continue their efforts to secure a wider observance of the national scheme.

Craft status via Labouring

31. Some men in the industry have proceeded to craft status after an initial period of employment as labourers. This arrangement has operated in certain crafts and its prevalence varies as between different regions. Such men have usually received little or no technical education. They may, however, possess considerable practical ability and may prove to be good "tradesmen". It is understood that their number is declining.

32. The Council makes no recommendation for action but considers that the matter might be examined by the industry.

Secondary Education in England and Wales

33. It has been stated that in general the more successful a boy is at school the less likely he is to take up a manual occupation on leaving.

34. Understanding of the present position may be assisted by brief reference to the relations between secondary education and the building industry over the last 50 years. It was about that time that the first junior technical schools were opened in London, for the purpose of giving boys some introduction to the practices of industry during their last years at school. London employers, who had during the previous half-century shown some reluctance to train apprentices, were prepared to consider recruiting junior technical school leavers for craft training, regarding them as less of a financial liability than the boys with no such prior knowledge of the trade.

35. During the next generation, the junior technical school developed considerably and the idea was widely adopted in industrial areas in the provinces.

Here, however, the provision of central school places was often less generous than in London and, as a result, the admission to junior technical schools became highly competitive, only boys of relatively high academic ability being accepted. These boys, in general, preferred the drawing office apprenticeships in engineering firms to the craft apprenticeships offered by builders and, even where the curriculum of the school had been specially directed towards building, it was usual to find that only a minority (and those, mainly, the less able boys) entered the building industry. In London, with its less competitive entry conditions, the building schools continued to send substantial proportions of the leavers to the crafts, though here, also, it was accepted that the most able boys would seek employment in the offices of architects, structural engineers and specialist firms employing drawing office staff.

36. Following the Education Act of 1944 the organisation of secondary education generally, but not always, developed in three main lines, with secondary grammar, secondary technical and secondary modern schools. It soon became evident that the secondary technical schools were to develop further the provincial rather than the London type of junior technical school, aiming at a level of recruitment comparable to that of a grammar school, offering sixth-form work and a road to the technological faculties of universities and, more generally, feeding the technical professions. Recruitment to craft apprenticeships ceased to be the principal aim in this scheme, although there was ample educational reason for retaining workshop practice as a part of the curriculum. Furthermore, direction of the curriculum towards any particular industry tended to become less common although, in the main, the teaching of workshop practice continued to show strong traces of the junior technical school tradition. The London building schools could not easily be adapted to this pattern and may be seen, at present, pursuing an interim existence in various stages of transition.

37. This policy for secondary technical education should be considered in relation to the policy for secondary modern schools. These schools, providing for the greater part of each age group from 11 to 15, contain the large majority of future craft apprentices and a number of local education authorities have already encouraged secondary modern schools to take account of the nature of local industry when planning their extended courses. The provision for workshop facilities in such cases has often been relatively generous and some large authorities (e.g. Middlesex) have experimented with some degree of specialisation towards particular industries in certain schools. Current educational thought would not, however, favour so strong a specialisation towards a particular craft as was normally practised in the London junior technical schools.

38. The normal course in a secondary modern school lasts three to four years, depending on the date of the pupil's birthday, and it is the last year, or possibly the last two years, that are affected by the specialisation referred to. Many of these schools are developing, successfully, extensions to the normal course and are finding that many of the more able pupils are prepared to stay at school one or more years after attaining the age of 15 provided their prospects of a career are improved (often by reaching General Certificate of Education, Ordinary level, in suitable subjects) before leaving. The majority of such developments to date would have little relation to recruitment to craft apprenticeships, but consideration has already been given to the provision in certain secondary modern schools of a fifth year, which should prove helpful to boys as a preparation for entry to occupations such as craft apprenticeship.

39. The attraction of the more able pupils remains the core of the building industry's recruitment problem. The development of the old London three-year junior technical school course (which, in the inter-war years, kept pupils at school two years after the normal leaving age of 14) was made possible largely by the willingness of industry to allow one year's remission of apprenticeship to boys who had satisfactorily completed the course. Comparable recognition to fifth-year (pre-apprenticeship) courses in secondary modern schools would do much to stimulate the recruitment of the more able boys to craft apprenticeship, if it ensured no loss of seniority in respect of completion of apprenticeship from remaining at school, provided progress there was satisfactory. This is a matter which merits the earnest consideration of the industry.

Pre-apprenticeship Training

40. In the First Report of the Council issued in 1944 it was stated that since the publication of the Report of the Central Council on Training for the Building Industry there had been considerable development in junior pre-employment education for building. In England and Wales this education took place in Junior Technical Schools for Building and in Scotland in Pre-apprenticeship Building Courses. The Council considered it essential that every effort be made to secure that the boys leaving those schools were employed in the industry, even although, owing to the conditions then existing, the work upon which they were to be employed was not the most suitable, but it was necessary that the boys should gain experience which would be of value to them, and any defect of experience of the craft ought to be made good by attendance at part-time day technical courses. The Council expressed the hope that courses to be arranged would form part of their training as apprentices.

41. The Council was advised that sufficient facilities for that part-time day instruction did not then exist at all centres, and recommended that the Ministry of Education and the Scottish Education Department should encourage the expansion of junior pre-employment education for building, and that the building industry should influence and support such expansion.

42. These courses were introduced when the school-leaving age was 14 and in order to bridge the gap between the end of the ordinary secondary school career and the minimum age of apprenticeship. The courses provided that rather more than half of the time should be devoted to general and technical education and the remainder to practical training. The raising of the school-leaving age to 15 in 1949 at first resulted in a big drop in enrolment for the pre-apprenticeship courses but the value of these courses was recognised.

43. At present the National Apprenticeship Scheme provides in England and Wales for the following reductions in the period of indentured apprenticeship in cases where there has been pre-apprenticeship training.

(a) One year in the case of a boy who has satisfactorily completed a full pre-apprenticeship course in building at a secondary technical school or other institution.

(b) Two years in the case of a boy who has satisfactorily completed a whole-time senior day course in building of not less than two years' duration.

The scheme also permits local or regional Joint Committees to exercise discretionary powers and to examine circumstances of individual cases submitted to them for special consideration. Where appropriate they permit entry into apprenticeship at an age later than 15 or 16. In such cases the period of apprenticeship

may be reduced, provided that (unless with the special consent of the National Joint Apprenticeship Board) a minimum period of three years is served and the apprenticeship does not end earlier than the apprentice's 20th birthday or later than his 21st birthday.

44. It is understood that the National Joint Apprenticeship Board keeps the nature and scope of technical education facilities under continuous review and would consider the desirability of amending existing provisions regarding remission of indentured apprenticeship where changes in technical education standards or facilities appeared so to warrant.

45. The Advisory Council on Education in Scotland, in their Report on Technical Education published in 1947, drew attention to the unfortunate effects of the gap which then existed between the school-leaving age and the minimum age of entry upon apprenticeship. The Report included a recommendation that school training should be extended along special lines in order to bridge this gap and facilitate recruitment to industry of the best boys the schools could offer; schemes of recruitment and training were required in every industrial area, and a real advance could be made by extending school training on special lines.

46. Since that report many advances have been made on the lines suggested, and the biggest development, numerically, has so far been in one-year pre-apprenticeship courses in building and engineering established in trades colleges. The training is not specialised, but relates to all the main crafts of one industry, some guidance being given in the ultimate choice of a craft within that industry. During the course many boys acquire a liking or find that they have an aptitude for a different craft from the one which they originally aspired to enter. The vitality of the work undertaken at the Trades College in Scotland by pre-apprenticeship students springs from the association of work with learning and learning with work. Learning and instruction thus have wholly new meanings and subjects once considered difficult or lacking in interest become plain and intelligible. Although the normal age of apprenticeship to the building industry is 15, the raising of the school-leaving age to 15 has made little difference in the popularity of the post-school building courses, no doubt largely because a six months' remission of apprenticeship is given in Scotland in respect of a pre-apprenticeship course satisfactorily completed. But there is still great scope for further development of these pre-apprenticeship courses. Parents and teachers can do much to encourage boys leaving school to take these courses in order to get a sound training in the fundamentals of the craft they mean to follow. At the other end, the industry could give an added importance to these courses if they would increase the remission of the apprenticeship period for the time spent in them and if employers would give preference to these students when engaging apprentices.

47. One-year pre-apprenticeship courses in building have been set up in certain technical colleges in England to operate end-on to a secondary modern school course terminating at the age of 15. Few of these courses have attained success comparable to that of their Scottish counterparts, largely because of the very limited encouragement they have received from local industry. The accommodation and equipment in a technical college, as well as the inspiration to be drawn from the craft work undertaken there by older students, constitute special advantages for the operation of a pre-apprenticeship course and the industry would be well rewarded for any trouble taken in fostering the development of

such courses. As the contribution of secondary technical schools to craft recruitment dwindles the Council hopes that opportunity will increasingly be sought to establish and develop courses of this type. Wherever comparison is possible between entrants to apprenticeship at different ages it is likely to be found that the 16+ entrant with pre-apprenticeship training is a more stable and diligent apprentice than the boy who enters industry direct from a secondary school at 15+. If more employers would realise this and would make known their preference for boys who had been through pre-apprenticeship courses, not only would those courses soon be well supported but the quality of recruit would be substantially raised. The development of fifth-year courses in secondary modern schools referred to in paragraph 39 should not be regarded as competing with the development of the pre-apprenticeship courses described above. There is room for experiment along both lines and industry will no doubt encourage whichever form a local education authority is best able to provide.

Building Craft Training at Home Office Approved Schools

48. When it was ascertained that training in certain building crafts was undertaken at Home Office Approved Schools, the Council considered whether the boys might be suitable for apprenticeship in the building industry. This had a dual objective: the possibility of increasing the number of new entrants to the industry, and the help which might be rendered to the schools in their work of rehabilitation. It was felt that if suitable standards of instruction could be given by competent teachers and facilities provided for practical and technical training, the appropriate Joint Apprenticeship Committees in the industry might be invited to endorse and recognise the training so that the period spent at the school after the normal age of entry into apprenticeship might count towards the total period of apprenticeship. The ages of boys leaving the intermediate and senior schools at which such training was given varied considerably. It was therefore considered necessary that boys selected as suitable for apprenticeship should be able to serve at least two years of apprenticeship within the industry and that the combined period of recognised craft training at a school and in the industry should be not less than five years in the case of completion at the age of 20 years and not less than four years in the case of completion at 21 years. Further, such boys should be able, if circumstances required, to extend apprenticeship beyond the age of 20 or 21 years in order to complete the five years' or four years' combined training.

49. These schools are primarily concerned with the reconstruction of character after some delinquency or domestic misfortune, and the first concern should therefore be to deal with each boy as an individual suffering from some form of disturbance in his normal development. A few of the boys are below average intelligence, but the majority are capable, under proper guidance and in suitable environment, of responding to an appeal for right thinking and action. Provision is made for correcting any initial backwardness in their schoolroom work and basic knowledge. With this background the Council attached the utmost importance to the training facilities at the schools being considered in relation to the conditions obtaining in normal apprenticeship. Where requests were received for training to be recognised visits were made to schools by members of the Council and representatives of Joint Apprenticeship Committees, and questions involving comparison with industrial practice and requirements received careful attention. Adjustments in the teaching staff and alterations in classroom and workshop facilities were suggested when regarded as desirable.

Assistance was also given in designing a syllabus of training which would approximate to apprenticeship requirements, including technical education. Within the limits of the financial provision available the Home Office readily subscribed to the changes suggested.

50. At most of the schools there is considerable opportunity for practical experience in the maintenance work constantly required on old and adapted school premises, whilst in others much new construction work has been undertaken, e.g. classrooms, gymnasiums, staff houses, which has given wide scope for craft training.

51. An appraisal of the value of the scheme to the approved schools appears in the Seventh Report on the Work of the Home Office Children's Department (published in 1955), from which the following extract is made:

"In recent years, the most important development in vocational training in approved schools has been the expansion of building training. Under arrangements made with the Building Apprenticeship and Training Council, the time spent in an approved school on a building trade course recognised by the Council may be counted as part of a boy's apprenticeship in the building industry after he leaves the school. Thirty-six approved schools for older boys give training in one or more building trades; at the end of 1954, twenty of these had been recognised by the Council and applications by others for recognition were under consideration. Prerequisites of recognition are the provision of properly qualified instructors, adequate workshops and an approved course of training. Among the separate crafts recognised are carpentry, brickwork, painting and decorating, plastering, plumbing and electrical work. . . . The arrangements made with the Building Apprenticeship and Training Council are of great value, not only in raising the standards of the training given, and in facilitating the placing of boys in a skilled trade when they leave approved schools, but also in enabling a boy to see clearly how his training is related to his future. . . . Discussions are proceeding regarding the possibility of similar arrangements for approved schools which give training in engineering, agriculture, horticulture, cabinet making and catering.

"Most approved schools providing vocational courses enable promising boys to study and sit for outside examinations. These include the examinations of the City and Guilds of London Institute, the Royal Horticultural Society, and the Union of Lancashire and Cheshire Institutes."

52. The importance of close liaison being maintained between schools and industry has been recognised as an essential requirement of this training, and at those schools accorded apprenticeship recognition small Advisory Committees have been set up to facilitate the arrangements. These Advisory Committees, convened by the Headmaster, and holding meetings at the school at regular intervals, consist of school nominees (usually the Chairman of the Board of Governors and the Headmaster), an employer and operative representative of the local Joint Apprenticeship Committee and a representative of the building department of the local technical college. It cannot be too strongly emphasised that the development of the training work is much assisted by the effectiveness and regularity in the meetings of these Advisory Committees and by the close industrial relationship which they can afford.

53. Heads and Managers of the schools, assisted by the Advisory Committees just described, exercise great care to select suitable boys for apprenticeship. The interest of the school staffs, the encouragement the boys receive, and the increasing support which has been forthcoming from the industry with the wider knowledge of the capabilities of the boys, testify to the success of this scheme. It is much to be hoped that the industry can further extend its knowledge of the work done in these schools and so ensure the continued and progressive development of this fruitful arrangement, which is serving as a model in regard to other trades in which the schools give training.

54. Appendix 10 contains full particulars of the senior and intermediate boys' schools where the training in building crafts has been recognised for apprenticeship purposes. Of the total number of boys who were selected as suitable, and at the end of their school training were transferred to the building industry, about 50 per cent secured indentured apprenticeships. This compares favourably with the general apprenticeship position, and is particularly gratifying when it is remembered that the home circumstances of these boys are difficult and the preparation through training for a sound career is a matter which is often considered by the parents to be subservient to immediate and substantial financial returns irrespective of the aggravated consequences on such boys. The Headmasters and their staff do what they can to correct this attitude with some measure of success.

Education during Apprenticeship

55. It is the normal practice for a building craft apprentice over the age of 16 to pursue his technical studies in a craft course. Building craft courses, which are fully described in Ministry of Education Pamphlet No. 4, *Building Crafts*, occupy four or five years and include, in each year, a class in craft theory, a class in workshop practice and a class in one or more of the associated subjects of calculations, science, practical geometry or, in the final year, building construction. The student who makes good progress in the course will usually take the City and Guilds of London Institute's Intermediate Examination in the craft after two or three years and the Final Examination two years later. For the more able students, therefore, the craft Final Examination will come at about the end of the apprenticeship period. The National Apprenticeship Deed provides for the apprentice to be released for attendance at a technical college on one day (or two half-days) per week up to the age of 18 and he is required also to attend on two evenings per week throughout his apprenticeship. Until he is 18, therefore, the apprentice's technical studies extend over about 10 hours per week and this time is usually divided approximately as follows: craft theory, three hours; workshop practice, three hours; associated subjects, four hours. This division permits at least one hour per week to be devoted to general studies, which may bear the title English or Social Studies, the object of which is to provide for some general reading and exercises in written composition with a view to improving the student's capacity for self-expression and his understanding of the world at large.

56. For many apprentices over the age of 18, employers are prepared to continue day-release provided the apprentice's progress is satisfactory (the Plumbing Trades National Apprenticeship Council's indenture makes formal provision for this arrangement). The apprentice who transfers to an evening course after attaining the age of 18 is strongly encouraged to attend on three evenings per

week in order that his studies in the associated subjects may continue along with those in craft theory and workshop practice.

57. An apprentice who enters industry on leaving his secondary school (usually a secondary modern school) at 15 normally takes a one-year preliminary course before entering his craft course. The preliminary course usually includes classes in English, calculations, science, technical drawing and workshop practice. The course may be provided in a technical college but many of the larger authorities provide such courses in day colleges or other establishments of further education. In the latter event, students may have to attend at a senior college for their workshop practice and, in view of the importance of this subject in enlisting the student's interest in the course as a whole, it is essential that careful consideration should be given to ensuring a workable arrangement.

58. When a boy has satisfactorily completed a course at a secondary technical school up to the age of 16+, particularly if the course has been specially designed for intending entrants to the building industry, he is normally admitted direct to the second year of the appropriate craft course. It has been the usual experience that apprentices belonging to this group have included a large proportion of the most successful students in the craft courses and the arrangement has worked satisfactorily. Current developments in secondary technical schools are tending to reduce the emphasis on preparations for entry to a particular industry and to raise the general academic level of the course. Lack of previous study of building subjects may raise doubts as to the advisability, in the future, of exempting apprentices from secondary technical schools from the first year of a craft course but, in view of the ability likely to be found in those students, if they are to be admitted to craft courses, the second year should not prove beyond their immediate capacity. Similarly, students who have satisfactorily completed a one-year full-time pre-apprenticeship course, after the age of 15, either in a secondary modern school or in a college of further education, are likely to prove themselves able to make good progress on a craft course, and the privilege of starting in the second year, besides being justified by results, would be a valuable encouragement to the student and a stimulus to the development of the pre-apprenticeship courses.

59. Although the craft courses have been regarded as providing the most suitable studies for craft apprentices, it has been recognised that certain apprentice students have the necessary academic ability to cope with the more ambitious standards of the National Certificate courses in building. These students have included most of the boys who enter craft apprenticeship after completing a secondary grammar school course and some of those coming from secondary technical schools. This second group is likely to increase with the changes already referred to in the organisation of secondary technical education. It is sound educational practice to place a student in the course which will provide the fullest scope for his academic abilities, and the National Certificate course offers the able apprentice an opportunity of proceeding, in due course, to higher studies either by way of a National Joint Apprenticeship Board scholarship or other award. These considerations are likely to affect only a relatively small number of apprentices.

Importance of Vocational Interest

60. It is important to recognise that craft apprentices come, in the main, from among the boys who have little interest in study for its own sake. Teachers in secondary modern schools (and in the senior elementary schools that

preceded them) have known the great difficulty of retaining the interest of a large proportion of their pupils during the last year or so before the statutory school-leaving age is reached. The urge to begin working and earning has a profoundly unsettling effect upon the studies of these adolescents, and only when they have been brought to appreciate a relation between their school work and their subsequent life in industry have they been prepared to give their teachers a fair reward for their efforts. Many examples exist of the influence of a vocational interest in maintaining the progress of a pupil's full-time education not only to the normal leaving-age but for a year or more beyond it. The pupils who are prepared to continue their full-time education are usually from the more able sections of this group, and the great value and importance of pre-apprenticeship courses, to which reference has already been made, arises from this circumstance.

61. Establishments of further education face similar problems in organising courses for craft apprentices, many of whom are only too ready to display their impatience with studies from which they had hoped to escape when they left their secondary school. Experience in the operation of craft courses for day-release students since 1945 has shown the immense value of the building crafts as vehicles for further education. An indication of this value is to be found in the importance of workshop practice in the operation of a craft course. It has been observed repeatedly that a large proportion of building craft apprentices are not prepared to interest themselves actively in a course of study at a technical college unless that course includes a class devoted to workshop practice in the apprentice's own craft. Given such a class, under a good teacher skilled in that particular craft, the attitude of the apprentice towards the whole course changes; and he is prepared to try to progress in the studies which involve writing, calculations and drawing which, in fact, occupy two-thirds of the course. There is no doubt that a considerable proportion of craft apprentices are persuaded to continue their education for several years longer than they otherwise would largely by means of interest engendered through their craft. And it is important to realise that this continuance of education, the further development of the apprentice's capacity to read, write, calculate, draw and think, is the real function of the technical college. A variety of experience in the college workshop may, nowadays, be a useful part of the apprentice's training, but it is everyday work with the tools that makes him a craftsman. It is important that all concerned should appreciate the particular contributions which industry and the colleges have to make to apprentice training.

Education Facilities in Rural and Remote Areas

62. It is provided in the national form of apprenticeship agreement that attendance at a technical college may be either for one whole day or two half-days in each week or for an equivalent continuous period or periods in each year ("block release"). There is, however, a danger that concentration of the period of technical study may in some cases not only reduce contact with industry but also result in the technical study not being readily assimilated.

63. This question is of considerable importance in remote areas, and for small employers who are often seriously affected by the absence of apprentices on day release. Technical study is, however, so important that no apprentice should be deprived of this part of his apprenticeship, and careful consideration should be given as to the best method of meeting the requirements in each area. It may be found that a block release arrangement for technical study may be the most acceptable solution for apprentices in remote areas.

Welfare Fund

64. The Council established a Welfare Fund, with the purpose of promoting more effective apprenticeship training and to widen the opportunities open to recognised apprentices and craftsmen by the award of scholarships and prizes. This fund was built up of the 10s. fees paid by apprentices for Completion Certificates and donations made by the Federations of the Building Industry and City Livery Companies. The fund has been administered in accordance with rules which were approved by the Minister of Works, and awards have fallen into three main categories, viz. annual merit prizes, scholarships, and awards in craft competitions.

Prizes

65. In 1947 the Council inaugurated a scheme for prize awards made possible by funds available in its Welfare Fund.

66. The prizes were awarded on the basis of recommendations made by principals of technical colleges, employers and Joint Apprenticeship Committees, and following an assessment of merit by the Council on the information given on individual cases. This procedure led to certain anomalies owing to the lack of a common standard applied throughout the country, and it was decided that more satisfactory results might be secured by earmarking a total annual sum for prizes to be allocated to regional Joint Apprenticeship Committees who should undertake responsibility for assessing recommendations in relation to local circumstances. This change in procedure proved satisfactory and has been continued since January 1954 by the National Joint Apprenticeship Board and the Council Administering the Apprenticeship Scheme in Scotland, who have continued to award the prizes.

67. In 1952 the prize scheme was extended to include apprentices successful in the craft examinations of the City and Guilds of London Institute.

68. The Council is satisfied that these awards have proved an encouragement to further effort by the prizewinners and, through the publicity given at prize distributions, the efforts of others have been stimulated. This publicity has also emphasised the value of training in apprenticeship and has drawn attention to the career opportunities available in the building industry. The technical colleges also have benefited and have been encouraged in their endeavours by this recognition of their work.

69. There have grown up, however, many and various types of award at local, regional and national level, and to some extent these may conflict. It is recommended that care should be taken to co-ordinate the prize scheme in each area to ensure that each scheme operates efficiently and to the best advantage.

70. Particulars of the awards given by the Council are in Appendix 8.

Scholarships

71. Scholarships were inaugurated by the Council in 1947 to enable suitable apprentices to pursue full-time courses of study for a university degree or a Higher National Diploma in Building. Only a minority of the apprentices gaining the scholarship were qualified to enter a university course, though a number were admitted at Cardiff and a smaller number at Manchester. In each case the work involved in the course proved a formidable task for the scholars, but the majority of them graduated, in some cases with Honours. The Council records with satisfaction these successes, the merit of which is more clearly

appreciated when account is taken of the educational background of students normally entering university courses. Scholars who were unable to satisfy university entrance requirements were in all cases able to secure acceptance for Higher National Diploma courses in building at technical colleges. These courses, and particularly a sandwich course of this type, seemed better suited to the requirements of the scholars, and after 1953 no further scholarships for degree courses were given.

72. On completion of courses these scholars have been helped to obtain employment in the industry and the vacancies secured have provided excellent opportunities for their ability. The important positions many have secured have justified the confidence placed in them, and they have clearly demonstrated their capacity to undertake responsibility.

73. It has always been a matter of regret to the Council that only a small number of awards could be made owing to the limitation of resources of the Education and Welfare Fund and the number of donations obtained from the employer and operative organisations and City Livery Companies. The scholarships given annually have never exceeded six and have usually been only four.

74. A scholarship for higher training can prove a valuable means of attracting ambitious young persons to the industry, and the matter deserves careful attention in relation to the position in other industries where opportunities are available on a generous scale.

75. Further, with the changing requirements of the industry and the ever-increasing demand for properly trained persons who can assume the highest responsibility, the building industry cannot afford to ignore the necessity for providing financial facilities to enable a larger number of suitable persons, lacking the necessary resources, to be educated to the highest possible level.

76. Particulars of the scholarships awarded by the Council are given in Appendix 8.

Craft Competitions

77. The Council has always encouraged the efforts made by the industry, technical colleges and the Ministry of Works to bring to general notice the career opportunities in building at Open Weeks and Exhibitions. It has supported competitions in those crafts where outstanding training facilities were provided, or in respect of those crafts, e.g. the trowel trades, where more recruits were desirable in an area. All surrounding colleges have been invited to participate in these competitions and friendly rivalry has led to a standard of workmanship which not only acted as a spur to the boys and the colleges, but surprised employers by the quality of work produced.

78. There is no doubt that these craft competitions have proved a great attraction at Open Weeks and Exhibitions; the human interest and demonstration of ability have proved a valuable magnet and the Council commends these craft competitions for continuance on all suitable occasions.

79. Particulars of the awards given are in Appendix 8.

CRAFT APPRENTICESHIP PROBLEMS AND FUTURE POLICY

Importance of Craft Basis for Training

80. Attention has been drawn in paragraph 61 above to the value of the building crafts as vehicles for the further education of the type of boy who

usually becomes a craft apprentice. It is important to recognise that, although education is commonly associated with attendance at a school or college, a great part of education takes place outside educational institutions, e.g. in the home and in industry. The contribution of industry to this process depends, to a great extent, upon the right training conditions being achieved, and the long traditions of craft apprenticeship are a valuable asset to the building industry in this connection. Apprenticeship imposes a well understood and generally acceptable pattern of relations both between the apprentice and his employer and, even more important, between the apprentice and the craftsmen with whom he works.

81. Modern industrial development, with its tendency to eliminate the careful hand work that is the basis of most of the crafts, may appear to be a threat to the continued existence of the crafts and of craftsmen. Building industry techniques inevitably change and there must also be changes in craft skills, but it is important to recognise the difficulty of devising a training system to take the place of craft apprenticeship in producing skilled and adaptable workers.

Adequacy of Recruitment

82. The Ministry of Works Census returns indicate that the total recruitment to the skilled crafts of the building industry is not very different from the target figures put forward by the Council of the total entrants; it appears that less than 60 per cent are formally indentured as apprentices. This position, although a remarkable advance on that obtaining before the introduction of the National Scheme of Apprenticeship in 1945, is not accepted with complacency by the industry, and efforts are constantly directed towards encouraging employers to train apprentices wherever conditions permit and to apply the conditions of the National Scheme of Apprenticeship to all young men in training. Suggestions have, from time to time, been put forward for methods to be adopted to compel builders to make the fullest use of suitable building work for the purpose of training apprentices, but the general view has been that unless a builder accepts his responsibilities as an apprentice master voluntarily, he is unlikely to provide the conditions of training upon which the success of apprenticeship depends. The fact remains, however, that much suitable building work, undertaken by firms not unfavourably disposed towards apprenticeship, makes little or no contribution to craft training because of geographical or other administrative difficulties.

83. The apprentice school, or apprentice training centre, because of its place in engineering training in this country and in building training in France, suggests itself as a possibility that the industry or individual firms might explore. A great difficulty arises, however, in linking any apprentice school with real production in the building industry, which has few small-scale end-products in comparison with many branches of engineering and the factory industries. The vocational interest of a boy, to which reference has already been made, will not long be satisfied without a sense of achievement derived from useful production, and much of the value of craft apprenticeship as a means of training for the industry would be lost if a substantial period were served under artificial conditions. It is important to remember that, in France, the training in apprentice centres extends only over the years 15 to 18, at which latter age apprenticeship is complete.

84. Group schemes of apprenticeship, whereby a number of firms collaborate to extend the range of experience offered to apprentices, are finding increasing favour in the engineering industry of this country and could, in many areas,

also perform a useful service to building. Regional and local Apprenticeship Committees sometimes arrange the transfer of a building apprentice from one employer to another where a lack of variety of work makes such action desirable. These are, in the main, individual cases and are frequently not completed without difficulty. Building firms, particularly those most concerned with the training of apprentices, normally undertake a considerable variety of work, and difficulties in this connection are less likely to arise than in a factory industry. Nevertheless, collaboration of firms in this way could, in certain cases, make a valuable contribution to training and might well, also, stimulate increased recruitment of apprentices.

85. Many of the largest contracting organisations in the industry find themselves unable to make a proportional contribution to the training of apprentices on account of the very widespread nature of their activities. The lack of continuity of their work in one area prevents recruitment of apprentices who are not normally sent to work away from their homes area. Many of these large firms display great interest in training schemes for other groups of employees, and it is not unreasonable to suppose that they would be prepared to contribute towards apprentice training if acceptable means could be devised for them to do so. Consideration might therefore be given to setting up an arrangement under which firms unable to play their full part in the training of apprentices could contribute to the cost of training facilities on the lines of the apprentice master scheme. This type of training, highly regarded by those connected with apprentice training, might thus become a permanent feature of the industry.

Length of Apprenticeship

86. The number of young persons attracted to various crafts has been reasonable in relation to the total number of school leavers, but there has remained in certain periods a shortage of new entrants, particularly in the trowel trades. It has been suggested that in two ways at least this problem of recruitment might be eased and the general apprenticeship scheme improved.

87. The fixed period of five years for training in certain crafts might warrant re-examination. It is true that the use of tools and familiarity with certain trade processes should naturally improve with longer experience, but the view has been urged that a fixed period need not be the criterion for training in those crafts whose work is of a repetitive nature, and that a lengthy period of apprenticeship training may involve a risk of losing a boy's interest.

88. The contrary view has also been expressed, particularly by some experienced employers, that even the crafts which do not require a long course of technical training usually need a long period to attain real facility in the use of tools, and that therefore the five-year period is not too long. The Council considers that this matter merits further examination and invites the industry to consider it in the light of the general standard reached by boys entering upon apprenticeship.

Training for more than one Craft

89. The Council has on several occasions considered the possibility of an apprentice being trained in more than one craft, and particularly those crafts which are closely related or those not assured of steady employment in the future, e.g. masons. On many building contracts the work of various crafts is closely associated, and on small contracts the engagement of separate craftsmen

is often uneconomic. It is generally recognised that the efficiency of craftsmen is increased by a wide knowledge of the industry, and in many cases there might be advantage if the apprenticeship were not subject to training in one craft only. The practice already exists in some parts of the country for allied crafts to be undertaken as a recognised combined individual process, and it is felt that these arrangements might be capable of extension. In particular, recruitment to the craft of mason might be helped if apprentices were given the opportunity of acquiring another skill, e.g. bricklayer.

TRAINING FOR POSITIONS OTHER THAN CRAFTSMAN

Administrative Pupils

90. Since 1945 it has become increasingly the practice for building contractors to recruit technical and administrative staff from among the boys leaving secondary grammar schools at the age of 16, having taken subjects at the Ordinary or Advanced level in the General Certificate of Education examination. Boys have been recruited also from other types of secondary school where courses to approximately this level have been provided. After joining the industry, these trainees have usually pursued their technical education in National Certificate courses, and the steady growth of part-time day courses of this type reflects the progress of day-release arrangements for this section of contractors' staff. The duties of these young men within the contractor's organisation have included site work as assistants to measuring surveyors and office work in connection with estimates, accounts and general administration.

91. In 1948 the National Federation of Building Trades Employers prepared an outline scheme defining the principles of management training. This scheme did not attempt to prescribe a strictly defined pattern of training; instead it set out the minimum conditions which had to be fulfilled before the management training could be considered for deferment of National Service.

92. In 1948, also, the Southern Counties Federation of Building Trades Employers instituted a scheme of training leading to management, administrative and technical posts in the industry. Awards have been made available annually for a full-time course of study to be followed by two or three years of practical training with an approved firm of building contractors. A student pupil is attached to the firm for employment during the vacations of the full-time course, and on completion of that course for full-time employment with concurrent study for the examinations of the Institute of Builders.

93. In 1954 the Eastern Federation of Building Trades Employers also introduced a building studentship scheme designed to train young men for administrative posts leading to that of manager, agent, assistant manager or builders' surveyor and estimator. This latter scheme relied upon part-time study for the technical education of the trainees. Similar schemes have been instituted by employers' organisations in the North-Western and other regions.

94. A scheme of "articled pupilage" has been developed by the L.M.B.A. very recently. Boys leaving a secondary school at about the age of 16 and having reached approximately Ordinary level in suitable G.C.E. subjects, have been admitted to two-year full-time courses leading to the Ordinary National Diploma in Building. At this stage they have entered industry as administrative pupils and, in conjunction with their practical training, have continued their technical education in part-time courses. In any case, the objective of the studies of these

administrative pupils has been the Licentiate Diploma of the Institute of Builders (L.I.O.B.), which the more able trainees have been able to reach at about the age of 22.

95. It is understood that the Board of Building Education is devoting special attention to this type of course, and it is to be expected that recruitment in this way will be extended.

**Transfer of Craft Apprentices to Administrative Positions*

96. Craft apprenticeship was, until comparatively recent times, the normal method of training for all ranks in a builder's organisation, and although alternative forms of entry to the industry are now recognised, most builders have retained a warm interest in their craft apprentices and have been ready to select for advancement any young man showing promise of capabilities for supervisory or administrative work. The Council, through its scholarship scheme, has provided opportunities for a number of craft apprentices to proceed to the type of training reserved for those expected to reach, ultimately, high levels of responsibility in building firms, and these men now represent a most valuable asset to the industry. The decision of the National Joint Apprenticeship Board to continue to award scholarships to outstanding apprentices is a source of gratification to the Council, which believes this to have been one of its most valuable contributions to the advancement of training for the building industry.

97. The number of scholarships which the Board and other interested bodies are able to offer each year cannot, however, be expected to reach the level of providing for all the craft apprentices who merit the opportunity of receiving such training, and the Council understands that some firms provide for further training of specially promising craft apprentices. A good Ordinary National Certificate is to be accepted as a qualification for admission to a Diploma in Technology course, and this might well serve as the criterion for selecting craft apprentices for further training. Attention is drawn to technical State Scholarships and to the major awards of local education authorities which are available to students who qualify for admission to high-level studies. There is no better way of making craft apprenticeship attractive to boys of ambition and ability than by making it clear that ample opportunity exists for advancement in the industry for those apprentices who display the necessary capabilities.

98. Firms specialising in certain sections of work such as plastering and plumbing have continued to look, for their senior supervisors and administrative staff, to the more promising of their former craft apprentices but, in the main, these young men have been expected to pursue their advanced technical study in evening classes. In recent years, a limited number of firms have been prepared to offer special facilities for the training of selected apprentices and this practice is to be warmly commended. Present-day conditions demand that the managerial and senior technical staffs of specialist firms should be of a calibre equal to that of the general contractors.

National Council for Technological Awards

99. In July 1955 the Government announced the setting-up of a National Council for Technological Awards under the chairmanship of Lord Hives to approve courses of study at high level in selected technical colleges. It is the intention that courses recognised by the Council for the National Award (Diploma in Technology) shall be of degree standard. It is hoped that these courses will attract increasing numbers of boys of high ability to choose industry

for their careers, and will form a valuable part of the training of those young persons in industry who aspire to reach high managerial and executive levels.

100. The Council welcomes this new development in which it sees an opportunity to amplify the provision of building studies at the highest level and so to remove the limitations of this provision to which it has drawn attention in previous reports. It would, however, endorse the views expressed in the recent White Paper, *Technical Education*, which makes it clear that if these new high-level courses are to succeed, industry must produce the students by providing facilities for selected trainees at all levels to pursue their technical studies to the utmost point at which they can benefit from them. Only in this way can the number of competent technicians and technologists be increased to that required for industry to develop in accordance with modern requirements. The post-war years have seen great advances at the level of craft training and substantial developments at the technician level. The time is now ripe for attention to be given to increasing the supply of building technologists. This is, no doubt, a matter to which the Board of Building Education will give a great deal of consideration in the near future.

Foremanship Training

101. In the Fourth Report issued in June 1949 the Council referred to the serious shortage of men with the requisite training and experience to act as supervisors and foremen, pointing out that whilst its main interest was in the provision of facilities for education and training of young persons, education for building must be planned as one continuous process. It was recommended that there should be a review of the existing provision at technical colleges, etc., and that the industry should develop a long-term training scheme.

102. Early in 1950, on the initiative of the N.F.B.T.E., a Standing Committee for the Training of General Foremen in the Building Industry was established to make arrangements, in collaboration with the Ministry of Education and technical colleges, for setting up foremanship study courses and generally assisting in the training of foremen. The Committee, now the National Advisory Committee for the Training of General Foremen, has issued three Reports on General Foremanship Studies in which it is recognised that, with the change in emphasis in building from craftsmanship to assembly, the general foreman's task is altering and he is now mainly concerned with the fundamental principles of industrial administration and supervision leading through good team work to satisfactory productivity. While the technologies of craft skills and practices still have their place they no longer remain the only requirement of current industrial needs.

103. The City and Guilds of London Institute has recently approved a scheme and examinations for a Certificate in Foremanship Studies and the first examinations were held in 1956. This qualification seems likely to establish itself as a part of the requirements of a top-level general foreman and represents a most valuable contribution to the training of contractors' supervisory staff. It is understood that attention is now being given to the question of studies suitable to form part of the training of craft foremen. This large group of supervisors includes many competent men who, for one reason or another, are unlikely to qualify to take the Certificate in Foremanship Studies or to attain the status of a top-level general foreman. It is specially important therefore that their needs should not be overlooked and a satisfactory outcome of the present deliberations

would represent another valuable addition to the structure of foremanship training. Employers have been recommended to develop interest among their employees for the further training for supervisory posts, and the Council commends the reports and work of the National Advisory Committee to all concerned in the industry for support.

Management Training

104. The Council, in the Special Report issued in 1952, following a recommendation made in the Report of the Building Productivity Team of the Anglo-American Council on Productivity and the Report of the Building Industry Working Party, referred to the facilities existing for higher training in the industry and the action already taken by the industry to develop training for management, administrative and technical posts. Attention was drawn to the limited provision of much of the training, the need for further extension and the absence of general knowledge in the industry about the existing facilities. There is a growing recognition of the need for this kind of training and of the part that employers can play in its development. It rests with them to select suitable members of their staffs to undergo training and to provide opportunities for the trainee to broaden his experience in the exercise of managerial techniques. Formal study, though no more than a part of such training, is nevertheless essential. The best results will be obtained if the trainee is encouraged by the continued interest of top management in his development.

105. Training for management has now been undertaken as a special study by the Institute of Builders. With the full support and co-operation of the National Federation of Building Trades Employers, a Board of Building Education has been established under an independent chairman. This Board, whose membership includes representatives of the Institute, the National Federation of Building Trades Employers and National Federation of Building Trades Operatives, the Ministry of Works and Ministry of Education and other interested bodies and organisations, is now charged with surveying and advising upon problems related to management. The action now taken as a separate study should meet an outstanding need with results of great benefit to the industry, and the Council has noted with great pleasure this development in the educational field. It feels that there are good grounds for hoping that training for management will make great strides within the next few years.

Technical Education and Government White Paper

106. The Government issued in February 1956 a White Paper (Cmd. 9703), *Technical Education*, relating to the proposed expansion of the facilities for technical education for various industries including building. It is stated that between 1938 and 1955 the number of university students in science and technology has doubled, and since the Education Acts of 1944 and 1945 more schools and technical colleges have been built, more teachers recruited and more interest has been shown in education by parents and employers than in any corresponding period in our history.

107. The Government has now decided on a further expansion of technical colleges and for that purpose propose to put in hand immediately a five-year programme of development, related as closely as possible to the most urgent demands and the extent of available resources. The objectives during this period are to increase by about a half the output of students from advanced courses at

technical colleges, and as part of a proportionate increase at the lower levels, to double the numbers released by their employers for part-time courses during the day.

108. As technologies grow more complex and the need for versatility increases, the strain of reaching high qualifications by evening work or by studies on one or two days a week becomes more severe. There will be many, especially those whose ambitions do not extend beyond the Higher National Certificate, who will wish or will be obliged by circumstances to continue to take part-time courses. But the Government believe that for the highest technological qualifications sandwich courses will become more and more appropriate.

109. The Government consider that the bulk of full-time or sandwich courses should be carried on in colleges which concentrate on advanced courses of technological level. They also wish to see the proportion of advanced work at these colleges vigorously increased so that as many of them as possible may develop speedily into colleges of advanced technology.

110. The conditions which demand an increase in technologists apply also to technicians; five or six technicians may be required to every technologist for which the traditional method of training is apprenticeship, including the day-release provision. Whilst technical education is essential, it is always regarded as an adjunct to, and not a substitute for, practical training on the job. The Government therefore consider that industry must play the leading part in any increased output of craftsmen. The Government are ready to further the provision of the additional facilities for technical education which may be required both to match any rise in numbers and in meeting any call for more intensive technical education of apprentices, and consider that the terms of apprenticeship and education should be adjusted to suit changing need. Rigid apprenticeship age limits should not prevent the completion of a pre-apprenticeship full-time course where it is found to provide a useful preparation for a young person who intends to become a skilled craftsman but who would not finish the course until after his 16th birthday, neither should there be withdrawal of the privilege of day release at the age of 18, which sometimes occurs in the middle of an educational year.

111. Reference is made in the Paper to the serious wastage which now occurs in courses for technicians and craftsmen, particularly at the age of about 16, through reliance on evening classes, the need to work overtime, being away on a job, shift work, travelling difficulties, ill health, a change to another job, home conditions which make study there impossible, or lack of encouragement from the employer. Experience shows that wastage from part-time day courses, especially a large majority which are attended as part of a formal apprenticeship training, is much less than from evening classes. The local education authorities and industry will therefore be urged to enable more and more boys to study during the day instead of in the evening.

112. The general position outlined applies to Scotland, except that in contrast to England and Wales the keystone of the system of technical education has been not the local technical colleges administered by a single education authority and serving that authority's area, but the central institution functioning on a regional basis. From the outset these institutions were designed to provide, in addition to such other less advanced facilities as might be appropriate, the highest forms of instruction in applied science, together with opportunities of research and discovery. They have made great strides within their own bounds

in developing the higher forms of technical education, and have exercised a profound influence on the provision made by education authorities at the more elementary levels.

113. The courses offered at seven colleges in Scotland—full-time and part-time—covered a wide range of subjects, including the sciences and the technologies relating to industry, a distinguishing feature being the full-time courses leading to their own Diploma for Associateship. These full-time courses are comparable in scope and standard with university degrees.

114. One of these central institutions is generally recognised as having pioneered the sandwich course and developments in that field may be of great significance in the future by the acceptance into the penultimate year of men who have gained their Higher National Certificates. In that way, by the addition of two years' full-time to the five or more years' part-time study, men can carry their advanced studies to a level comparable with the highest available anywhere in this country, and secure a qualification recognised as equivalent to the honours degree.

115. Alongside these full-time courses, the central institutions provide a wide range of part-time courses. At first these were taken during the evening only, but part-time day classes were later added.

116. As local technical colleges and other day institutes providing pre-vocational or other full-time courses were developed, so day-release courses also came to be established. Substantial progress has been made but development in Scotland has not been as rapid or as far-reaching as it ought to have been, or as it has been in England and Wales.

117. While the system of technical education in Scotland is stated to be creditable, no ground exists for complacency. The main strength has lain in its more traditional features of a comparatively high proportion of students embarking on undergraduate and similar full-time courses, and the maintenance of evening class numbers. In the newer developments of pre-apprenticeship and day release the record is less satisfactory, and in the new age for an ever-wider variety of courses and the training of ever-increasing numbers of students at all levels much requires to be done.

118. The whole plans of the Government, as outlined in detail in the White Paper, for expanding facilities and increasing the opportunities available for all to benefit from technological education in all phases, depend on attracting many more students and placing them in the right courses, and on their willingness to work hard and go through with their studies. To this end the support of parents for further education must be won, and employers and trade unions are invited to give all practical help to make the new plans a success.

City and Guilds of London Institute

119. The Council is indebted to the City and Guilds of London Institute for a very valuable review of some aspects of the post-war work of the Institute in connection with the building crafts.

120. The review, which is given in full at Appendix 3, shows that there are now 10 times as many part-time day students as before the war and twice as many evening students. The number of candidates for examination has increased fivefold, but the percentage of passes shows no appreciable decline. Only a small minority of students obtain the Institute's Full Technological Certificate.

121. The general picture is of a continuing extension of education in the building industry and a broadening of its scope, and this is primarily due to the industry's decision that technical education should form part of its training. The Institute have found it necessary, however, to modify the syllabus of the painters' and decorators' course to keep it within the students' industrial experience.

122. The main burden of the extension has fallen on the technical colleges, a number of which are gravely handicapped by shortages of accommodation and staff. The Institute has found that the quality of staff is more important than accommodation.

123. The Institute expects developments in further education to continue with the expansion of existing technical colleges, the building of new colleges and the increasing flow of teachers from the technical teachers' colleges. In addition there is expected to be a widespread development of technically biased courses in secondary modern schools, and these are likely to increase the number of boys who will become interested in craft apprenticeship, and may make them better prepared for enrolment in technical college courses.

124. The Institute is giving serious consideration to the general content and balance of syllabuses for craft courses to ensure that students' interest is secured and maintained and that the academic parts of the courses are given more practical meaning and relevance to the craft element. It is possible that many students who now find the academic parts of the courses somewhat onerous would derive considerable advantage if greater emphasis were given to craft aspects.

The Sphere of Activities Covered by the Work of the Council

125. From its inception in the war period and subsequently throughout the years of its activities, the Council has recognised that in matters relating to education and training the development in the building industry is associated with considerable change.

126. The objective attitude of members of the Council has enabled difficult problems to be tackled in a spirit of co-operation. It is believed that the work of the Council has been highly respected, and its activities have encouraged those concerned with individual training. The Council is nevertheless conscious of many tasks incomplete because they are of a long-term nature and require continuous study. It commends to all concerned in the industry consideration of the recommendations made in the various reports issued. The success achieved since the National Apprenticeship Scheme was inaugurated in 1945 proves that this field of work, involving the lives of those on whom the industry's future depends, is one of rich reward.

Summary of Conclusions

127.

- (a) The industry is invited to continue the periodic review of the number of apprentices required to maintain the craft force (para. 11).
- (b) In view of the number of non-indentured learners, both sides of the industry are urged to continue their efforts to secure wider observance of the National Scheme of Apprenticeship (para. 30).
- (c) The practice of men proceeding to craft status after an initial period of employment as labourers might be examined by the industry (para. 32).

- (d) Recognition of fifth-year (pre-apprenticeship) courses in secondary modern schools for one year's remission of apprenticeship merits the earnest consideration of the industry (para. 39).
- (e) The development of pre-apprenticeship courses at technical colleges and of fifth-year (pre-apprenticeship) courses at secondary modern schools should be encouraged by the industry (para. 47).
- (f) In the development of craft training at Home Office approved schools, close liaison should be maintained between the schools and the industry (para. 52).
- (g) Craft competitions are commended for continuance on all suitable occasions (para. 78).
- (h) Consideration might be given to an arrangement whereby firms which are unable to play their full part in the training of apprentices would contribute to the cost of training facilities on the lines of the apprentice master scheme (para. 85).
- (i) The industry is invited to consider the length of apprenticeship in the various crafts (para. 88).
- (j) The Reports of the National Advisory Committee for the Training of General Foremen are commended to all concerned in the industry (para. 103).

APPENDIX I

BUILDING EDUCATION IN ENGLAND AND WALES

1. The Council is indebted to the Ministry of Education for providing information outlined in the following paragraphs and details relating to the provision of building education in England and Wales.

2. Appendix 4 gives detailed information to supplement Appendix 1. Particulars are given about major establishments in which full-time and part-time courses have been provided as well as evening institutes at which building instruction has been made available. The details relate to the year 1953-54.

3. Most technical colleges make some provision for building education, especially for part-time day and evening students. In the course of the past few years these facilities have been greatly extended, and will be increased still further as the result of new buildings and extensions which are now in course of construction, or have been authorised in building programmes. In summary form, the provision consists of:

Full-time education:	Courses	61	Students	722
Part-time education:	Courses	1,924	Students	40,965
Evening education:	Classes	9,207*	Class entries	129,676*

Developments under way (including the 1955-56 building programme) involve the provision of some 400,000 sq. ft. of new teaching space allocated to building departments, at an estimated cost of over £1,750,000. The 1956-57 and subsequent programme will include yet further new provision for building departments.

Existing Provision

4. Details of the existing provision at technical colleges providing full-time, part-time day, and evening classes for building education are given in Appendix 4, but the following table indicates the general trend of attendance over the period 1950-54:

TABLE I

Year	Full-time				Part-time Day				Evening	
	Courses	Advanced Students	Senior Students	Junior Students	Courses	Advanced Students	Senior Students	Junior Students	Classes	Entries
1950-51	73	502	597	176	1,379	1,364	30,958	5,265	9,147	149,669
1951-52	72	235	363	195	1,663	1,592	32,235	4,733	8,670	131,430
1952-53	68	220	321	161	1,731	1,999	32,564	5,009	8,918	129,849
1953-54	61	225	294	203	1,924	958	34,954	5,053	9,207	129,676

5. It will be observed that over these years there was a heavy fall in the number of full-time students, coupled with a smaller proportionate fall in the number of courses. Fewer students came forward and classes became smaller.

6. As regards part-time day students, numbers increased appreciably, but the number of courses increased even more: courses increased by about 40 per cent while numbers increased by less than 10 per cent over the period.

*Evening class statistics are not comparable with those for day work; each class is recorded separately, and each student entry. Thus, if a student attends three evening classes, that counts as three class entries.

7. In evening work, the number of classes increased slightly, while the number of class entries dropped by about 13 per cent.

8. Both the increase in the number of part-time day students, and the decrease in evening students, are roughly in line with the general movement throughout the country, where there has been a tendency to change over from evening classes to day work in vocational subjects, as part-time day release is more widely accorded by employers. There is, however, no parallel in other subjects to the heavy reduction in full-time students of building—a reduction of over 40 per cent. (It should be added that the statistics of full-time students include short full-time courses, lasting, e.g. one week or one month, as well as courses lasting for the full year. Entries to the examination for Higher National Diploma and Ordinary National Diploma, however, show reductions of the order of 50 per cent and 40 per cent respectively over the years 1952-54, so that there can be no doubt that a large fall has taken place in the number of students following full-time courses of one or more years' duration for the building industry.)

National Certificate Schemes

9. These schemes have been holding their own, as shown in the following table:

TABLE II

Year	Higher National Certificates			Ordinary National Certificates		
	Entries	Passes	Courses	Entries	Passes	Courses
1952	795	667	81	1,661	1,087	132
1953	848	689	82	1,726	1,137	135
1954	772	637	83	1,764	1,154	137

10. Appendix 5 contains further details regarding students studying for National Certificates. It will be noticed that there is an increase in the number of ex-grammar school pupils. As regards trades, there is a decrease in the number of students from among the carpenters and joiners, and an increase among surveyors, draughtsmen and structural and civil engineers.

The City and Guilds of London Institute Examinations

11. In the building crafts and over the post-war period as a whole, there has been substantial progress, as indicated in Appendix 3, paragraphs 3, 4 and 5.

12. *Course in Foremanship.* These courses for builders are conducted by about 40 colleges with the following enrolments:

1951	..	..	985
1952	..	..	935
1953	..	..	443

13. The drop in 1953 may be due to the raising of qualifications for admission (as decided by the Standing Committee for the Training of General Foremen in the Building Industry), and partly to the fact that in the preceding years substantial arrears of training were being overtaken.

Management Studies

14. Opportunities for building students to study management subjects are provided in a number of colleges as part of the Higher National Diploma course. Thirteen colleges include "Organisation and Management" in their final year, and three of these colleges include "Supervision" in the second year. In addition, "Supervision and Management" is offered by a number of colleges and by all the examining unions as an endorsement subject to the Higher National Certificate.

15. To sum up, it appears that, excepting part-time day work, education for the building industry is doing no more than holding its own at the same level.

Prospective Developments

16. New accommodation in connection with building subjects will be coming into use in the course of the next three or four years to the value of approximately £1,750,000, and it is clear that over that period technical colleges in general will be able greatly to improve and extend their provision for building education at all levels and of all kinds, from craft work to post-advanced courses.

Prospective Demand

17. A striking feature in the situation is the substantial reduction which has taken place in the number of full-time students. It is particularly striking at a time when the demand from other industries for more highly trained men is increasing. The building industry is one of the largest in the country, employing some 1,250,000 men, but the proportion of its employees technically trained is probably less than in other industries of comparable size. Other industries recruit a fair proportion of young persons who have had a grammar or technical school education up to the age of 18; and many firms are finding that, owing to the improved facilities for university education and the desire of the best students to enter a university, recruitment even at the age of 18 is not sufficient to fill prospective requirements for the higher posts. A large proportion of the building industry, however, depends in the main on recruitment from secondary schools at the age of 15 or 16. In the past, recruitment at this age could yield a substantial number of young people of high ability, but with the increased "creaming" of the brighter youngsters for the grammar schools (and later the universities) this possibility is greatly diminished.

18. Although a number of firms undertake articulated pupilage schemes it seems unlikely that the number of men recruited in this way is sufficient to meet the industry's requirements. The virtue of this type of recruitment will no doubt secure wider recognition than it has at present and the schemes may be expected to increase.

19. Again other industries are making increasing use of training for management at various levels. Much of this training takes place in industry itself but use also is made of technical colleges and other educational establishments. There is scope for considerably more of this kind of training in the building industry, both for general training and special courses.

20. It is clear that if the industry is to meet the problems arising from full employment and to achieve the degree of efficiency which will be necessary in the future, it must undertake some intensive training for supervision and management; and there are encouraging signs in, for instance, the formation of the Board of Building Education of advances in this direction.

APPENDIX 2

BUILDING EDUCATION IN SCOTLAND

1. The Council is indebted to the Scottish Education Department and Ministry of Works Scottish Headquarters for the following information on building education in Scotland.

Provision of Facilities for Building Education

2. The provision for building education in Scotland consists of full-time pre-apprenticeship courses, part-time courses (day release and evening classes) for apprentices and full-time courses in building science.

3. Courses are provided both in local technical colleges maintained by education authorities and in central (technical) institutions, namely, the Royal College of Science and Technology, Glasgow, the Heriot-Watt College, Edinburgh, the Dundee Technical College, Robert Gordon's Technical College, Aberdeen, and Paisley Technical College. Central institutions are independent of individual education authorities and are financed directly by the Scottish Education Department from the Education (Scotland) Fund. In general, the local technical colleges provide pre-apprenticeship, craft and Ordinary National Certificate courses and a few courses for Higher National Certificates, while the central (technical) institutions provide more advanced courses for Higher National Certificates, Higher National Diplomas and Associateships in building as well as professional courses for chartered surveyors and sanitary inspectors.

Numbers of Students attending various types of Course

4. The table below shows the numbers of students enrolled in various types of course in 1951-52 and in 1953-54. "Craft Courses" in this table means courses for City and Guilds or similar certificates or at a lower or more practical standard in the main building trades including brickwork, joinery, painting and decorating, slating and tiling, masonry and granite work and glazing. Of these crafts, painting and decorating is in some cases taught in the central (art) institutions. Masonry and granite work is also taught in the central institutions.

Type of Course	1951-52			1953-54		
	Full-Time	Day Release	Other Part-Time	Full-Time	Day Release	Other Part-Time
Higher National Diploma College Diploma or Associateship courses (central institutions only) ..	15			27		
National Certificate courses (total)		1,196			86	1,048
Of whom in central institutions ..		(595)			(79)	(395)
Craft courses (total) ..		3,195	10,547		4,405	9,558
Of whom in central (art) institutions		(53)	(132)		(59)	(249)
Pre-apprenticeship courses (local technical colleges only) ..	744			865		

Pre-apprenticeship Courses

5. These courses were introduced when the school-leaving age was 14, in order to bridge the gap between the end of the junior secondary school course and the minimum age of apprenticeship. The raising of the school-leaving age to 15 at first resulted in a big drop in enrolments in these courses, but their value had become recognised, and the industry agreed to allow six months remission of apprenticeship in respect of a course satisfactorily completed. The courses are provided in 10 technical colleges and most last for one year. About one half of the time is devoted to general and technical education and the remainder to practical training in the main building trades. The students are helped to find out for themselves the trade for which they are best suited; it is not uncommon for boys to discover that they have an aptitude for a different craft from the one they originally aspired to enter. This, incidentally, helps to find recruits for some of the less popular crafts. The number of boys who enter the industry through these courses is now about 800 annually. It is still slowly increasing year by year, but could be increased yet further and more rapidly if all employers would follow the example of those who recruit apprentices straight from the secondary school only as a last resort.

Apprenticeship Training

6. Ten years ago the number of apprentices in the building industry in Scotland who attended courses of technical education was just over 6,000. By 1955 the number had increased to about 15,000. Most of them take courses of a craft type, usually in preparation for one or other of the examinations of the City and Guilds of London Institute. A minority of not much more than 1,000 (7 per cent) take the more scientific courses leading to Ordinary or Higher National Certificates. Of the total, the number attending day-release courses—almost all of which have been introduced since the war—is about 4,500 and the remaining 10,500 attend only in the evening. The development of day-release courses has been hampered by two interacting factors; on the one hand, many of the smaller firms have been reluctant to implement the National Agreement on this matter; on the other, some education authorities, especially in the rural areas, have been less than enthusiastic about the establishment of technical colleges, partly because of their doubts about the use which would be made of such facilities if provided. In the absence in many places of special provision for day-time courses for the industry, evening courses there have sometimes had to be limited to what could be arranged in school workshops (e.g. for carpenters), and art rooms (for painters and decorators).

Course in Building Technology

7. These advanced courses are at present held in two centres. The Heriot-Watt College, Edinburgh, have a three-year course leading to the Higher National Diploma, and the Royal College of Science and Technology, Glasgow, have a four-year course leading to the Associateship of the College. The numbers, naturally, are small (see Table A).

Trends in Particular Building Trades

8. The figures available do not indicate any specific trend to or away from individual trades.

Courses in Management

9. Various facilities are available for training in foremanship and supervision for all industries. These are:

- (1) The Dundee Technical College, the Heriot-Watt College, Edinburgh, and the Stow College of Engineering, Glasgow, provide courses leading to the Certificate of the Institute of Industrial Administration.
- (2) Part-time courses for foremen and supervisors ranging from six weeks to one year are provided at Burnbank School of Engineering, Lanarkshire, the

Heriot-Watt College, Edinburgh, Paisley Technical College, Robert Gordon's Technical College, Aberdeen, and Dundee Technical College.

- (3) The Royal College of Science and Technology, Glasgow, conducts a variety of full-time courses of a professional character which concentrate on management at a high level rather than on foremanship. The college has a residential centre for management studies. Courses for the Diploma of the Glasgow School of Management Studies are provided jointly by the Royal College of Science and Technology and the Scottish College of Commerce. Courses leading to the Diploma in Management Studies awarded by the British Institute of Management in conjunction with the Scottish Education Department are provided at Dundee Technical College, the Heriot-Watt College and the Scottish College of Commerce. These colleges and Robert Gordon's Technical College, Aberdeen, also conduct courses for the Intermediate Certificate in Management Studies.

It is not known to what extent these courses are used by employees from the building industry, though there is some indication that the industry makes less than average use at least of part-time day courses because of the difficulty of releasing key men from the building sites. But courses specifically designed for building foremen and leading to the college's Certificate in General Foremanship have been held with some success at Stow College of Building for the last three years, and the Heriot-Watt College are providing the City and Guilds course in General Building Foremanship. It is hoped to introduce a course for Building Foremen next session at Robert Gordon's Technical College, Aberdeen.

Future Developments

10. In the whole field of technical education (not only in building education) the stage has been reached where worth-while development of any magnitude depends upon a dual approach to the problems already mentioned: education authorities have to be convinced of the need for many more local technical colleges to be provided, and employers have to be convinced of the value of day release. It is only by full co-operation between education authorities and representatives of local industry that the present programme of expansion of technical education facilities can be pushed forward with a real sense of urgency. New schools of building now being erected or planned include:

Paisley. The new Trades College at Paisley, the building of which was started recently, includes considerable provision for education in the building trades.

Glasgow. A new college is to be erected in which an area of about 100,000 sq. ft. is to be made available for the Stow College of Building, which is at present housed in a number of small and unsatisfactory premises.

Falkirk. A new technical college planned for Falkirk will make provision for all the main building trades.

Other colleges. New technical colleges for which planning is still at a very early stage are also to be built at Aberdeen, Ayr, Clydebank, Dundee, Edinburgh, Kilmarnock and Perth to replace or expand present unsatisfactory provision. All these colleges will include facilities for education in the building trades.

CITY AND GUILDS OF LONDON INSTITUTE REVIEW

INTRODUCTION

1. The post-war period has been characterised by a fivefold increase in the numbers of candidates in the building crafts coming forward for examination by the Institute and also by an important change in the type of course followed by most apprentices in technical colleges. A proper understanding of the present position cannot be achieved without full appreciation of the significance of these two factors.

THE PRE-WAR POSITION

2. In round numbers, 2,500 candidates took the Institute's Intermediate and Final examinations of 1938 in the crafts of carpentry and joinery, woodcutting machinists' work, painting and decorating, brickwork, plumbing, plastering and masonry. The corresponding figure for 1955 is 12,200. The Institute's published syllabuses for 1938 were limited to the crafts themselves, in that no separate detailed syllabuses were provided for associated subjects (science, mathematics, etc.). The great majority of students attended evening rather than part-time day classes. Although it was possible to follow a broadly based course comprising both the craft and its associated subjects and so gain a Full Technological Certificate, the fact that only 184 such certificates were awarded in these subjects in 1938 indicates that only a very small minority of students did so. The minute proportion of the numbers engaged in the industry which these figures represent is emphasised even more by the fact that of the 2,500 candidates 1,900 were in carpentry and joinery or plumbing, and of the 184 Full Technological Certificates awarded, 134 were in these two crafts. It is clear that in brickwork, masonry, plastering and painting and decorating, the supply of craftsmen with a broadly based technical education was even more limited. The repercussions of this state of affairs on subsequent expansion after the war will be referred to later.

POST-WAR GROWTH IN NUMBERS

3. During the war the numbers of candidates decreased until 1942-43 and then recovered, until in 1946 the 1938 position had been regained, with 3,000 candidates distributed between the crafts approximately as in 1938. November 1945 saw the adoption by the industry of the National Joint Apprenticeship Scheme, incorporating provision for part-time day release of apprentices to attend technical classes on one day per week to the age of 18, with evening attendance throughout apprenticeship. From 1947 onwards the numbers of candidates increased rapidly as apprentices completed the courses of two and four years' duration leading to the Intermediate and Final examinations respectively.

4. The numbers of candidates taking the Intermediate and Final examinations in the crafts mentioned in paragraph 2 above were, respectively:

1938	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955
2,566	3,063	5,359	7,304	9,404	10,960	10,991	10,916	11,358	11,645	12,221

The number of Full Technological Certificates awarded grew from 184 in 1938 to 553 in 1954 and 730 in 1955. These figures do not give an entirely accurate picture of the growth, because of the incidence of three factors: (a) the time-lag occasioned during the completion of the formalities necessary for the award, (b) the recent introduction of a regulation requiring candidates to be 21 years of age before the award may be

granted, (c) call-up of students for National Service at 21 years of age, generally before application has been made for the award.

5. The growth of part-time day classes in building subjects (not all C.G.L.I. or craft students) is indicated in very general terms by the following figures based on information from Ministry of Education reports:

Year	1938	1947	1954
Part-time day building students	4,000	22,000	40,000*

Over the same period evening class entries appear to have risen much less and approximately to have doubled.

SYLLABUSES AND EXAMINATION RESULTS

6. Comparison of the 1955 syllabuses with those of 1938 shows that, generally, the technical and craft content has remained substantially on the same basis; the craft work is identified with greater precision and fuller detail in the current versions, and gives evidence that new techniques and materials, and changes in emphasis consequent upon industrial trends, have been taken into account. The examination papers are also closely comparable as regards both the practical and written papers and reflect similar trends. In some cases the written papers are now a little more closely restricted to craft topics than formerly because the pre-war syllabus included a small amount of science and calculations which has now been transferred to the syllabuses for the associated subjects (which are covered by examinations set by the college, not by those of C.G.L.I.). In the light of this general uniformity in the examinations over the period, it is of interest that the overall percentages of passes in the examinations concerned are:

1938, 66%	1947, 61%	1948, 64%	1949, 65%	1950, 62%
1951, 60%	1952, 62%	1953, 60%	1954, 59%	1955, 65%

These percentages are similar to those for the Institute's examinations in other industrial fields.

7. These facts and figures show that a much larger number of students now achieve a standard that was reached by only a very small minority before the war. But this is not the whole story. The courses followed by most post-war apprentices are much broader in scope than those generally available in 1938 and cover, not only the theory and practice of the craft, but also associated subjects such as science, geometry, calculations, drawing and building construction. This is because the Institute's schemes in the building crafts were comprehensively revised towards, or shortly after, the end of the war in anticipation of the introduction of the National Joint Apprenticeship Scheme and in order to take advantage of the greater amount of time available with part-time day classes as compared with evening classes only. This broadening of the base of building craft courses represents a significant educational advance of considerable potential value to the industry. It seems possible, however, that it may also have presented difficulties to the less able students; these difficulties will be referred to later in connection with the Full Technological Certificate.

EXAMINATIONS—TYPE AND STANDARDS

8. In nearly all cases the building craft examinations are equally weighted between written and practical work. Typically the examinations comprise one written paper of three or four hours' duration and a practical test; the duration of the practical test is, of course, determined by craft requirements. The practical tests include only operations which are part of the regular practice of the craft and, although not easy, should not be beyond the ability of a reasonably competent student. The written papers, too, are primarily concerned with craft practice, processes, tools and materials. Examination of the work submitted by candidates at about the minimum pass level shows that the standard of achievement required for a pass, and the nature and scope of the work involved, correspond with what can reasonably be expected of a craft apprentice at the

*Of these, 4,700 were in National Certificate classes.

respective stage in his training. Craft competence and understanding is the criterion against which the Institute's examiners judge candidates, particularly at the borderline between pass and fail.

9. A feature of the examination results is the wide disparity in the percentage of passes at different colleges, and it is by no means unknown for a college with a vigorous and well-established building department to achieve an overall percentage of passes of more than 80 per cent in these building crafts.

10. Painters' and decorators' work has been an exception in that the scope of the examination has clearly exceeded normal craft requirements and the capacity of the average post-war painting craft apprentice. Action has recently been taken to rectify this, as described below.

PAINTERS' AND DECORATORS' WORK

11. The Institute's scheme in painters' and decorators' work was revised in 1947 along with those in the other building crafts. The revised scheme retained the very broad craft approach of the original and also (unlike the other crafts) included additional work on craft science which, being covered in the City and Guilds examinations, became compulsory for all candidates. By the early 1950s, however, it had become clear that the traditional type of course in painters' and decorators' work—designed to suit the interests and ability of students of above-average persistence, aptitude and capacity—was by no means suitable for post-war apprentice painters attending part-time day-release classes. The broad approach to painting and decorating required by the "volunteer" type of student of the pre-war era (many of whom were not craft apprentices) not only called for proficiency in plain painting and paper-hanging, decorative painting, lettering and a knowledge of painting materials, but also demanded high attainment in drawing and the cultivation of taste in relation to design and colour. The majority of post-war candidates found it impossible to reach a significant standard of achievement over so broad a field, particularly when this field was much broader than their own industrial experience (which was commonly the case). The disparity between the aims of the course, the capacity of the students, and industrial requirements became more and more obvious. Fortunately, co-ordination of the Institute's examinations with those of the National Painters' and Decorators' Joint Education Committee, and particularly the consequent reconstitution of the Advisory Committee on a broader industrial basis, provided an opportunity for a thoroughgoing revision of the whole structure of the course and examination arrangements. It seems highly significant that the revised scheme recently adopted provides for a basic craft course *strictly confined to the basic requirements of the apprentice craftsman*, with emphasis on a thorough understanding of and proficiency in the fundamental principles and practice of the craft. The basic craft course replaces the old intermediate course, and following it there is provision for specialisation in either decorative painting or industrial and commercial painting; these alternatives themselves represent a substantial broadening of the scheme to meet modern industrial requirements.

12. The revised scheme also requires more extensive and realistic facilities to be provided by the colleges and for a much closer identification of practical work with industrial requirements. Such development is by no means confined to the building industry, and there are some indications that this may become a characteristic feature of craft courses which are organised in intimate association with a national scheme for recruitment and apprenticeship training.

13. The progress of the basic craft course and its impact on subsequent enrolment in the Final courses will be watched with the greatest interest. The development of the basic craft requirements for their own sake, almost as a separate entity and without any suggestion of mandatory association with ancillary subjects of a more academic character, may conceivably have a profound effect on the "flavour" of the course and make it more attractive to the students. It would clearly be highly significant if such a development materially increased the proportion of students completing the course as a whole and taking the Final examination.

14. The growth in the size and scope of the work in the building departments of technical colleges and the closer association of the industry with this work through the operation of the National Joint Apprenticeship Scheme have permitted a number of new developments that would previously have been impracticable. In some cases these are ancillary to the schemes for the major crafts, but others have considerable importance in their own right. They are as follows:

15. "*Post-Final*" Courses. These are specialist courses for advanced students who have already passed a Final craft examination, e.g.,

- Handrailing and Stair Construction
- Formwork and Shuttering for Concrete Construction
- Welding and Hard Metal Work for Plumbers.

16. The pioneer scheme of this type is Sanitary and Domestic Engineering in relation to Plumbers' Work, which was introduced as long ago as 1931, and based on the secure foundation of the well-developed courses in Plumbers' Work.

Schemes for the "smaller" crafts. These are:

- Mastic Asphalt Work
- Roof Slating and Tiling
- Street Masons' and Paviers' Work.

17. Even now, the last two of these are held as "Special Examinations" only, i.e. the examinations are held at a very small number of centres at the request of the education authorities concerned and on the basis of the authorities' own syllabuses. In Roof Slating and Tiling the scope of the syllabus and examination differs for Scottish and English centres in accordance with industrial practice.

18. *Provision for specialisation within a craft.* This has recently been provided in two subjects where, following a common Intermediate course, alternative courses are available at the Final stage:

- Woodcutting Machinists' Work: Final (Joinery) or Final (Furniture).
- Furnace Brickwork: alternative to the normal Final examination in Subject 82, Brickwork.

A scheme related to a modern technique—Concrete Practice

19. This scheme is significant, and in this context unique, in that it is designed primarily for supervisors and potential supervisors in a field in which apprenticeship and craft status do not at present exist. Examination is at two levels, each following a course of about 24 lectures over one session of evening classes. This most unusual arrangement was adopted to meet the special circumstances of concrete supervisors.

Foremanship—General Foremanship Studies in relation to the Building Industry

20. A new scheme in General Foremanship Studies was adopted by the Institute in December 1955 and represents a development of major importance. The scheme provides for the first time a national qualification in the administrative and technical studies related to the work of a general foreman. It has been designed to fit into the general pattern of technical education for the industry so as to promote a flow of men with an appropriate background, experience and qualifications from whom may be recruited general foremen capable of meeting the growing demands of the work and of making a contribution to industrial efficiency at this vitally important level of management.

21. The Institute's Committee on Building Foremanship proposes also to direct its attention to the requirements of men at supervisory levels below that of the builder's general foremen and to do so in co-operation with the advisory committees for the several building crafts and the Consultative Committee for Building Subjects.

Other Employees

22. The relative completeness of educational provision for the traditional crafts has emphasised the absence of suitable courses for other types of employee. Typical

examples are plant maintenance mechanics, now employed in increasing numbers by the building industry, and clerks (however described) in the offices of builders and sub-contractors. At the present time no satisfactory form of further education appears to exist for such employees and a preliminary review of the position is being made.

General

23. The general picture that is built up shows a significant broadening and extension of educational provision for the building industry, primarily as a consequence of the industry's decision that technical education should form an essential element in its arrangements for training.

THE FULL TECHNOLOGICAL CERTIFICATE

24. The broadly based courses referred to in paragraph 7 above are intended to lead to the award of the Institute's Full Technological Certificate. To gain this award in a building craft a candidate must:

- Pass the Institute's Final examination in the craft.
- Have reached the age of 21 and had satisfactory experience in the practice of his craft.
- Satisfy the Institute that he has reached a suitable standard in other subjects related to the craft. These are referred to as "associated subjects" and they are necessary to a proper understanding and full development of the craft course. The normal way for a building craft student to meet this requirement is to complete a grouped course which includes these subjects and pass examinations set in them by the college concerned (or by a Regional Examining Union). Typical subjects are calculations, geometry, science, building construction, drawing and design.

25. The number of apprentices who gain the Institute's Full Technological Certificate in a building craft is much smaller than the number who gain a Final Certificate. In some cases this is because a comprehensive course covering the craft and associated subjects is not available to the student, but in many cases it is a reflection of the fact that the candidate does not satisfactorily complete the whole of the comprehensive course.

Some figures are given below, although the qualification must be made that Full Technological Certificates awarded in any one year are not necessarily based on passing the Final examination in the same or in the immediately preceding year; for this and some other reasons, only the broadest conclusions can be drawn from them.

Subject	Number of courses for Final* examination	Number of courses approved for F.T.C.	Number of Final Certificates 1955	Number of F.T.Cs. 1955
Carpentry and joinery	246	106	1,518	412
Woodcutting machinists' work ..	51	10	105	25
Brickwork	180	70	426	85
Masonry	17	17	32	10
Plasterers' work	46	10	36	8
Painters' and decorators' work ..	147	66	226	49
Plumbers' work	201	93	861	141
TOTAL ..	888	372	3,204	730

*The numbers of courses leading to the Intermediate examination are fractionally larger.

26. It will be seen that in all subjects except masonry, less than half of the courses preparing candidates for the Final examination have so far been approved for the award of a Full Technological Certificate, and less than a quarter of the candidates

getting a Final Certificate also complied with the additional requirements for the award of a Full Technological Certificate. At first sight it appears that this relatively incomplete development of Full Technological Certificate courses is very disappointing, bearing in mind that the revised syllabuses for Full Technological Certificate courses have been published for eight or more years. On the other hand, no course may be approved until all four years are in operation on a satisfactory basis. This means that many courses at smaller centres experience difficulties in meeting the requirements for approval. It is probably true that a substantial majority of courses are organised on the general plan for the Full Technological Certificate. The extent of the development still remaining to be completed is a reflection rather of the magnitude of the task than of lack of progress so far. Since the war, no less than 300 courses in building crafts have been approved for this purpose.

PROBLEMS IN THE COLLEGES

27. It will be evident from the previous paragraph that the principal burden of the expansion has fallen on the technical colleges. Probably only the larger and more fortunately placed colleges would claim, even now, to offer full facilities and accommodation, with adequate staffing, in a range of the building crafts. Staffing in particular presents formidable difficulties. The expansion in numbers, the broader scope of Full Technological Certificate courses, and inherent difficulties in recruiting as teachers men who combine broad craft experience and educational qualifications, are some of the major problems. In crafts such as plastering in which there is not a cadre of qualified ex-students because of inadequate numbers in the past, the problem of finding teaching staff for the establishment of new courses is especially severe. The difficulties generally are aggravated by conditions of full employment and by the heavy load carried by many men in responsible positions in the industry who, if available, would be potentially good part-time teachers.

28. In many colleges difficulties arise because numbers in certain classes tend to fall below the minimum for which a class may be kept open. Here again, the problem is especially acute for the "smaller" crafts. In the associated subjects it may be possible to group the crafts together—indeed this is often unavoidable—but it may seriously reduce the attractiveness and effectiveness of the course, particularly to the weaker students from the crafts which are not predominant in the class.

29. The expansion has inevitably given rise to substantial difficulties with accommodation and equipment, and much work has been done in cramped and unsuitable conditions. The results of the Institute's examinations have, however, generally confirmed that quality of teaching staff is the more important factor.

TAKING STOCK—A QUANTITATIVE ASSESSMENT

30. Although, as has been seen, developments arising from the new industrial and educational pattern established after the war have by no means achieved maturity, they have been in progress sufficiently long for a review of their operation to be made. The decade 1945 to 1955 has seen the first attempt by the building industry to operate on a national basis a modern apprenticeship scheme which includes provision for further education in technical colleges as a normal constituent. It would be unrealistic to expect such a major operation to come to fruition immediately. On the educational side, this is the first time that it has been possible to review the reactions of the general body of apprentices (as compared with the keener minority) to the technical classes provided for them.

31. Unfortunately statistics are not available to the Institute to give a complete and detailed picture of the enrolment and subsequent performance of building craft apprentices in technical college courses. But a very rough, general impression may be obtained by comparing figures from the 1953 census of the Ministry of Works with the 1955 figures for building craft examinations conducted at Final level by the Institute and at the Intermediate level by the Regional Examining Unions and the Institute. This

comparison is made in the following table. It must be emphasised that the candidates taking the Intermediate examinations in 1955 are not necessarily apprentices from the 1953 intake and, of course, the Final candidates of 1955 relate to an earlier intake.

Apprentice Intake compared with Examination Statistics

Craft	Apprentice Intake 1952-53 (Gt. Britain) (See Note 1)	Inter. Exam. of 1955 of C.G.L.I. or Reg. Ex. Union (See Notes 2 and 3)		C.G.L.I. Final Exam. of 1955 (See Notes 3 and 4)		Full Tech. Certificates awarded in 1955 (See Note 5)
		Sat	Passed	Sat	Passed	
Carpentry and Joinery ..	6,700	5,000	3,050	2,195	1,518	412
Brickwork	4,595	1,940	1,200	729	426	85
Masonry	436	70	45	46	32	10
Plastering	1,135	190	120	43	36	8
Painting and Decorating	3,498	1,365	850	420	226	49
Plumbing	3,453	2,215	1,655	1,224	861	141
TOTAL ..	19,817	10,780	6,920	4,657	3,099	705

- Notes: 1. (a) Some of these apprentices will have enrolled in National Certificate courses.
 (b) By 1955 some will have left the industry.
 (c) In 1953 about 56 per cent of all building craft apprentices were indentured.
2. Figures are rounded off owing to approximation necessitated by slightly different bases of statistics.
3. Figures include a small proportion of non-apprentices.
4. Intake in 1951 was a little lower than in 1953.
5. See qualifications in paragraph 4.

32. The above table suggests that in 1955 just over half the building craft apprentices in the respective age group sat for the Intermediate examination and about a quarter sat for the Final examination—notwithstanding that the latter is intended as the normal goal. Between recruitment to the industry and entry to the Final examination there is a series of hurdles, at each of which some apprentices fall out, resulting in an overall loss which is disappointingly large, even discounting those apprentices who never attempt to enrol at a college or leave the industry before completion of apprenticeship. Among the factors contributing to the present state of affairs there are undoubtedly the following:

- geographical or industrial circumstances making attendance at a course impracticable;
- courses available but only partly or inadequately developed;
- unwillingness of employer and/or apprentice to conform to the conditions of the apprenticeship scheme;
- unwillingness to attend evening classes after the period of part-time day release (i.e. normally after age 18);
- enrolment in National Certificate or other appropriate course;
- students' inadequate basic education and/or intelligence;

(g) possible unsuitability or unpalatability of course and examinations, conducing to lack of interest and incentive;

(h) departure from the industry before completion of apprenticeship.

33. The ratios of entries to the Intermediate examinations to annual intake suggest that availability of courses is a limiting factor in plastering and masonry.

Craft	Number of C.G.L.I. Courses	Apprentice Intake 1953	Ratio of (1955) Intermediate entries to Intake
			(Percentage)
Carpentry and Joinery	246	6,700	67
Plumbing	201	3,500	58
Brickwork	180	4,600	41
Painting and Decorating	175	3,500	34
Plastering	75	1,135	17.5
Masonry	25	436	17

(The qualification must again be made that the candidates in 1955 are not necessarily the apprentices recorded in the census of 1953. The figures for courses do not include those for Regional Examining Unions unless they also reach C.G.L.I. Final level.)

TAKING STOCK—A QUALITATIVE ASSESSMENT

34. The close relationship of the examinations with craft requirements and standards does not rule out the possibility that some modification in the type of course and/or the pattern of the examination may be necessary or desirable. The maintenance of students' interest is a factor of major importance in all forms of education, but it is paramount in part-time further education. It is possible that some adjustment of course and examination from this point of view, for example, by giving greater emphasis to the craft element as compared with the associated (more academic) subjects, would secure the interest of those students who now fail to complete their course and in doing so permit them to maintain a more satisfactory rate of progress.

35. This possibility has been considered by the Institute's Consultative Committee for Building Subjects, which advises the Institute on general matters related to the industry as a whole and on which the principal industrial federations and educational organisations are represented. The committee recently undertook a comprehensive review of the arrangements leading to the award of Full Technological Certificates in the building crafts, and since these arrangements have a decisive influence on the pattern of courses provided by colleges for apprentice craftsmen, it inevitably developed into a critical examination of all aspects of the courses and examination arrangements.

36. From evidence furnished by the statistics of the Institute's examination results, by the technical colleges and by industry, it seems that there are considerable disadvantages in the existing arrangements which assume that the great majority of craft apprentices (covering a very wide range of ability and interests) will wish to take, and be capable of profiting from, broadly based studies for a Full Technological Certificate. On the one hand, the less intelligent or academically minded student makes slower progress than he might, through lack of interest in the type of course provided. On the other hand, the more able and persistent student is not sufficiently extended by the relatively elementary type of course in the ancillary subjects, and the standard finally achieved is lower than it should be if full benefit to the individual and to the industry is to accrue. In this connection it is relevant that the standard required in ancillary subjects for a Full Technological Certificate is lower in the building crafts than in the Institute's schemes in most other subjects, e.g. engineering, textiles, chemical subjects, although it is evident that there is a great (and growing) need in the industry for men with a sound educational and technical background.

37. Any alternative arrangement which envisages even partial separation of the more or less academic students into streams must, of course, aggravate the difficulties which arise from small numbers in classes. The existing arrangements are undoubtedly a compromise, with the disadvantages that such arrangements usually possess. To be acceptable, any new scheme that may be devised must take into account the circumstances of both large and small colleges and permit each to make satisfactory—though not necessarily identical—provision for its students.

38. A significant broadening in the approach to craft studies has recently become apparent in the deliberations of the Institute's committees. The examination syllabuses have so far been almost exclusively concerned with technical matters. It is now felt that provision should be made in all building craft courses for discussion of the building industry itself, its importance to the community, its history and structure, the craftsman's place in the industry, his relationship with and responsibility to his colleagues, and matters such as accident prevention. At the Full Technological Certificate level it is thought that there should be an elementary introduction to problems of organisation and administration (at craft level) such as will whet the appetite of the potential supervisor. The integration of these additional topics into the craft courses, whilst preserving a proper balance, will only be possible as part of a most careful and comprehensive revision and it is to such broad problems that attention is being given by the Consultative Committee.

SUBJECTS OTHER THAN THE BASIC CRAFTS

39. In addition to the examinations in the basic crafts, with which this review is primarily concerned, the Institute examines in a number of other subjects of direct concern to the building industry. As a supplement to the information in paragraph 30 above, the following detail is appended:

Subject	Exam. Entries in 1938	Exam. Entries in 1955
Mastic Asphalt Work	—	28*
Roof Slating and Tiling	—	21*
Woodcutting Machinists' Work	112	434
Heating and Ventilating Engineering	79	324
Concrete Practice	—	496*
Ship Plumbing	4	51
Sanitary and Domestic Engineering in relation to Plumbers' Work	83	234*
Welding and Hard Metal Work for Plumbers	—	17*
Handrailing and Stair Construction	—	9*
Formwork and Shuttering for Concrete Construction Builders' Quantities	723	1,902
Structural Engineering	66	237
Gas Fitting	1,154	2,548
Electrical Installation Work	511	2,544

*These subjects were examinations at one level only. The others were at two levels, Intermediate and Final (or the equivalent).

FACTORS AFFECTING PLANNING FOR THE FUTURE

40. A significant part of the Institute's work at any time is related to new development and future planning. In this it is essential to bear in mind all factors of a major character that are likely to influence developments in further education. The present is a time of very rapid progress in a number of related fields and the following items may be singled out for special mention.

41. A very considerable amount of new building and expansion of existing facilities for technical education is taking place or is planned. This is likely to permit more and

more courses to be satisfactorily established on existing lines, so that a higher proportion of students will be able to follow courses that implement fully the arrangements envisaged in the National Joint Apprenticeship Scheme and the Institute's current syllabuses. Governmental policy in relation to technical education also makes the ensuing period one that is likely to be particularly favourable for the development of new courses for which a satisfactory case can be made by industry.

42. The increasing numbers of qualified students holding Full Technological Certificates, National Certificates in Building, or other suitable qualifications, will lead to improvement in the quality of the general body of building craft teachers.

43. The flow of qualified teachers from the three technical teachers' training colleges, and of part-time teachers holding the Institute's Technical Teachers' Certificate, will also raise the level of teaching.

44. The development of courses of high educational quality and with a building and technical bias in secondary technical schools and in grammar schools with a technical stream will result in a significant increase in the number of intelligent boys seeking employment in the industry. Probably only a minority of such boys will seek craft apprenticeships; some will almost certainly become in due course technical teachers, with excellent qualifications. The direct and indirect influence of the new Associated Examining Board for the General Certificate of Education will probably assist greatly in this development.

45. The immediate future will probably see widespread development of technical courses in secondary modern schools, many of which will have a bias towards the building industry. Boys from these schools are more likely than those from grammar and technical schools to seek craft apprenticeships, and it is possible that their grounding and the interest in technical study that will have been stimulated at school will make them more amenable to, and successful in, subsequent technical college courses.

46. No decision has yet been made as to the date on which the school-leaving age is to be raised to 16. The consequences of this step would be profound and must be borne in mind in all long-term planning. It is probable that one important effect would be to reduce the number of apprentices who are unable to profit from technical courses because of weakness in basic education. The developments mentioned in paragraphs 44 and 45 above would also be substantially strengthened.

MEMORANDUM BY THE MINISTRY OF EDUCATION

Provision of Technical Education in Building in England and Wales

The three schedules attached give details separately of:

- (a) all provision in building during the day (i.e. both Full and Part-Time Day in Major Establishments of Further Education, including Art Establishments), Schedule No. 1;
 - (b) all provision in building during the evening in Major Establishments of Further Education, including Art Establishments, Schedule No. 2;
 - (c) all provision of building subjects in Evening Institutes, Schedule No. 3;
- in the academic year 1953-54.

The establishments are grouped county by county, and the counties are in alphabetical order. The establishments are in alphabetical order within the county group, except in the case of establishments in county boroughs which are in alphabetical order at the end of each county group.

Schedule of Day-Time Provision

This is broadly divided into full-time courses, National Certificate courses and other part-time (mainly craft) provision.

Most of the "Other Full-Time" students (column 4) followed pre-apprenticeship full-time courses.

It is possible that a few colleges, which have apparently no National Certificate students, but a substantial number of students of "General Building", do in fact run National Certificate courses but have not submitted their statistical returns correctly.

Schedules of Evening Provision

The information here is given under two categories:

- (a) classes in major establishments;
- (b) classes in evening institutes;

the bulk of the work being in the former.

These schedules give particulars only of entries into classes. They do not give particulars of students following courses in the evening. A student who followed, for example, a National Certificate course might well have entered for two or three classes and would be shown as two or three class entries in the appropriate class columns. As a very rough guide, the Ministry usually divides the number of class entries by three to find the approximate number of evening students.

The places providing wholly evening Ordinary National Certificate and Higher National Certificate courses have been marked in columns 16 and 17. Those places which provide an evening National Certificate course as part of a combined part-time day and evening course only have not been marked.

APPENDIX 4

MAJOR ESTABLISHMENTS INCLUDING ART—FULL-TIME AND PART-TIME
DAY PROVISION IN BUILDING (STUDENTS)

Establishments	Full-time Students				Part-time Students (Day)															
	H.N.D.	O.N.D.	Other Full-time	Total (Cols. 2-4)	National Certificates			Brickwork	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork Machining	Other Wood- working Trades	Total (Cols. 9-19)	Total (Cols. 8 and 20)
					H.N.C.	O.N.C.	Total (Cols. 6 and 7)													
F.E. = Further Education	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1																				
Bedfordshire, N. Beds. College of F.E.	36	..	26	..	30	..	..	..	42	..	..	134	134
Luton and S. Beds. College of F.E.	7	43	50	46	..	19	..	28	..	..	..	70	..	..	163	213
Newbury, S. Berks. College of F.E.
Windsor and Maidenhead, E. Berks. College of F.E.
Maidenhead School of Arts and Crafts
Reading Technical College
Aylesbury Technical Institute
Chesham Technical Institute
High Wycombe College of F.E.
High Wycombe School of Art
Slough College of F.E.
Cambridge, Cambra. Technical College and School of Art
Sawston Village College
Eastham, Curlett Park College of F.E.
Crewe Technical College
Hyde Technical and Art School
Macclesfield College of F.E.
Northwich, Verdin Technical College
Northwich School of Art

Establishments	Full-time Students				Part-time Students (Day)												Total (Cols. 8 and 20)			
	H.N.D.	O.N.D.	Other Full-time	Total (Cols. 2-4)	National Certificates			Brickwork	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Staining and Finishing	General Building	Carpentry and Joinery		Woodwork and Machinery	Other Wood- working Trades	Total (Cols. 9-19)
					H.N.C.	O.N.C.	Total (Cols. 6 and 7)													
P.E. = Further Education																				
1																				
Sole Further Education Centre
Birkenhead Technical College
Chester College of F.E.
Chester School of Art
Stockport College of F.E.
Wallasey Technical College
Canthorpe and Redruth Technical College
Falmouth Technical Institute
Penzance School of Art
Workington College of F.E.
Carlisle Technical College
Cardiff College of Art
Chesterfield College of Technology
Chesterfield College of Art
Hemmer Technical College
Ilkeston College of F.E.
Derby Technical College
Derby College of Art
Barnstaple, N. Devon Technical College
Newton Abbot Science and Technical School
Newton Abbot School of Art
Paignton School of Art and Craft
Tiverton Science, Art and Technical School

* Combined brickwork and masonry.

Torquay School of Art and Craft	
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Establishments	Full-time Students				Part-time Students (Day)															
	H.N.D.	O.N.D.	Other Full-time	Total (Cols. 2-5)	National Certificates			Brickwork	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slatting and Tiling	General Building	Carpentry and Joinery	Woodwork Mechanic	Other working Trades	Total (Cols. 9-19)	Total (Cols. 8 and 20)
					H.N.C.	O.N.C.	Total (Cols. 6 and 7)													
F.E. - Further Education	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1																				
Basingstoke Technical College	26	..	..	..	13	..	..	..	31	..	..	70	70
Bournemouth Municipal College of Technology and Commerce	14	14	22	..	9	..	27	..	..	..	56	..	..	114	128
Bournemouth Municipal College of Art	6	21	27	57	..	14	9	38	..	..	2	150	..	..	256	283
Portsmouth College of Technology	5	61	..	71	..	..	40	175	..	..	383	463
Portsmouth College of Art	17	63	80	61	..	44	..	..	..	..	..	..	..	..	44	44
Southampton Technical College	16	..	..	..	..	..	..	..	..	16	16
Southampton College of Art
Winchester School of Art and Crafts
Hereford College of F.E.	24	24	21	..	9	..	21	..	..	15	37	..	..	103	127
Hereford School of Art and Crafts	20	..	..	..	..	..	..	..	..	..	20	20
Bishop's Stortford Technical Institute	31	31	47	..	7	..	26	..	..	33	75	..	..	33	33
Hatfield Technical College	22	22	22	..	10	..	13	..	..	..	49	..	..	155	186
Leitchworth, N. Herts. Technical College	26	26	14	..	..	..	..	..	..	83	14	..	..	94	94
Watford Technical College	12	..	..	..	111	137
St. Neots Technical Institute	12	12
Newport, Isle of Wight Technical College	12	12	..	..	..	30	..	18	..	16	..	..	24	39	9	..	136	136
Bromley College of Art	11	..	9	14	27	..	..	..	60	..	..	121	121
Dover Technical College	34	..	..	..	30	..	..	..	65	..	..	129	129
Brith Technical College	3	14	17	24	..	..	..	16	..	..	9	56	..	..	105	122
Folkestone Technical College	5	5	32	..	..	..	21	..	..	..	37	..	..	90	95
Gravesend Technical College	35	35	13	..	11	..	18	..	..	..	46	..	..	88	123
Gravesend Art School	11	..	..	..	..	..	..	..	..	11	11
Malden Technical College	21	21	35	..	29	..	41	..	..	35	70	5	..	215	236

[illegible]

Establishments	Full-time Students				Part-time Students (Day)															
	H.N.D.	O.N.D.	Other Full-time	Total (Cols. 2-4)	National Certificates			Brickwork	Masonry	Painting and Decorating	Plastering	Furnishing and Sanitation	Glazing and Allied Trades	Siding and Tiling	General Building	Carpentry and Joinery	Woodwork Machining	Other Wood-working Trades	Total (Cols. 9-19)	(Total Cols. 8 and 20)
					H.N.C.	O.N.C.	Total (Cols. 6 and 7)													
F.E. = Further Education																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Oldham Municipal School of Art and Crafts
Preston, Harris Institute
Rochdale Municipal Technical College
Rochdale Municipal School of Art
St. Helens Technical College
Salford Royal Technical College
Southport Technical College
Southport School of Art and Crafts
Warrington Technical College
Warrington School of Art
Wigan and District Mining and Technical College
Coalville Mining and Technical College
Hinckley College of F.E.
Loughborough College of F.E.
Melton Mowbray College of F.E.
Leicester College of Art and Crafts
Boston and District Technical College
Grantham College of F.E.
Gainsborough County Technical College
Scunthorpe, N. Lindsey Technical College
Grimby College of F.E.
Grimby Art School
Lincoln Technical College
Lincoln School of Art
Brixton Day College
Deptford, L.C.C., S.E. London Technical College
Deptford, L.C.C., S.E. London Day College

Hackney, L.C.C., Hackney Technical College	9	21	12	30	10	41	51	18	8	36	27	44	19	22	18	72	21	139
Hammersmith, Hammersmith School of Building								53	21	19		52	44		53	151	21	371
Islington Northern Polytechnic	32	29	19	80	18	114	132	31	73	40	43	94	52		107	62	3	167
Lambeth, L.C.C., Britton School of Building	9	18	27	27				107					94		107	153	59	695
St. Marylebone, The Polytechnic																		827
Wandsworth, L.C.C., Wandsworth Technical College																		
Woolwich Polytechnic						33	33	24		10		24				39		39
Acton Technical College																44		102
Baling Technical College and Art School																7	5	12
Enfield Technical College								22		4		28				46		100
Southall Technical College																59	38	97
Tottenham Technical College																66	24	90
Twickenham Technical College																83	15	246
Willesden Technical College	15	53		68	7	37	44	23	44	11	16	29	54		22	50	2	137
King's Lynn Technical College				16				43		44	16	78			73	99	7	360
Great Yarmouth Technical College																		88
Great Yarmouth School of Art and Crafts								29		10		10			12	46		95
Norwich City College and Art School					9	57	66	138		33	15	61			43	157	16	12
Corby Technical College																		463
Kettering Technical Institute										5		24			32	25		62
Wellington Technical College												27				23		64
Northampton College of Technology										32	16	38				40		147
Northampton School of Art										26						82		217
Ashington County Mining School										27								27
Newcastle upon Tyne, Rutherford College of Technology					69	175	244	29		35		52				54		83
Beeston College of F.E.																	39	126
Mansfield Technical College								15								25		40
Mansfield School of Art								92		43		63				103		258
Newark, The County Technical College																		43
Workson, The County Technical College																17		17
Nottingham and District Technical College																		97
Nottingham, People's College of F.E.																		204
Nottingham College of Art and Crafts																43	30	251
Banbury, N. Oxon Technical College and School of Art																99		290
																		103
																		60

Establishments	Full-time Students				Part-time Students (Day)															
	H.N.D.	O.N.D.	Other Full-time	Total (Cols. 2-4)	National Certificates			Brickwork	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork and Machining	Other Wood-working Trades	Total (Cols. 9-19)	Total (Cols. 8 and 20)
					H.N.C.	O.N.C.	Total (Cols. 6 and 7)													
F.E. = Further Education																				
1																				
Henley Technical Institute	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Witney, W. Oxon. Technical College	26	45	71	16	8	7	18	6			47	81	18	47	311	382
Oxford College of Technology, Art and Commerce				61*		26		78								
Peterborough Technical College	7		7	8		24		9			23	33		97	104	
Oakegrove, The Walker Technical College											25	23		23	23	23
Oswestry Technical Institute				22		25		17			30	37		131	131	25
Shrewsbury Technical College						34								34	34	34
Shrewsbury School of Art																
Bridgewater Technical and Art Institute								10			76			86	86	86
Frome Technical and Art Institute				43		23		37			11			11	11	11
Taunton Technical and Art College						23						95		198	198	198
Somerset College of Art, Taunton				10		23		21				22		23	23	23
Weston-super-Mare Technical and Art Institute						19								72	72	72
Yeovil Technical College and School of Art						10					92			102	102	102
Bath Technical College				47*		33		35			29	100	20	264	292	292
Bilston College of F.E. (Art)						6								6	6	6
Brierley Hill Art Classes						17								17	17	17
Burton-upon-Trent School of Art and Crafts						22								22	22	22
Leek School of Art						11								11	11	11
Newcastle-under-Lyme School of Art and Crafts						6								6	6	6
Stafford County Technical College				25				11			12	47		95	95	95
Stafford County School of Art and Crafts						19								19	19	19
Tamworth College of F.E.														19	19	19
Burton-upon-Trent Technical College				24			6	19			24	50	19	157	195	195

* Combined Brickwork and Masonry.

Smethwick, The Chance Technical College	..	48	13	69	25	21	2	7	32	66	114
Stoke-on-Trent, N. Staffs. Technical College	..	60	181	12	27	82	14	13	242	622	682
Walsall Technical College	..	20	16	9	9	39	7	13	45	108	128
Walsall Municipal School of Art and Crafts	..										
West Bromwich Technical College	..										
West Bromwich Ryland Memorial School of Art	..	24	61	10	29	39	10	13	50	99	160
Wolverhampton and Staffs. Technical College	..									9	9
Wolverhampton College of Art	..									50	50
Wolverhampton Wulfrun College of F.E.	..									152	152
Lowestoft Technical Institute	..										
Lowestoft School of Art	..										
Ipswich School of Technology	..										
Ipswich School of Art	..										
Bury St. Edmunds Technical Institute	..										
Ewell County Technical College	..										
Epsom and Ewell School of Art and Crafts	..										
Guildford County Technical College	..										
Guildford School of Art	..										
Redhill Technical College	..										
Richmond Institute of F.E.	..										
Wimborne Technical College	..										
Croydon Technical College	..										
Croydon School of Art and Crafts	..										
Beith-on-Sea Building Apprenticeship Classes	..										
East Grinstead Apprenticeship Classes	..										
Lewes Building Apprenticeship Classes	..										
Brighton, Preston Technical Institute	..										
Brighton Technical and Art College	..										
Eastbourne Technical Institute	..										
Eastbourne School of Art	..										
Hastings Technical Institute	..										
Hastings School of Art	..										
Bognor Regis Technical Institute	..										
Horsham Technical Institute	..										
Horsham School of Art	..										
Worthing Technical Institute	..										
Worthing, W. Sussex College of Art and Crafts	..										
Leamington Spa School of Art and Crafts	..										

Establishments	Full-time Students				Part-time Students (Day)															
	H.N.D.	O.N.D.	Other Full-time	Total (Cols. 2-5)	National Certificates			Brickwork	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork and Machining	Other Wood-working Trades	Total (Cols. 9-19)	Total (Cols. 8 and 20)
					H.N.C.	O.N.C.	Total (Cols. 6 and 7)													
F.E. - Further Education	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1																				
Nuneaton Technical College and School of Art																				
Rugby College of Technology and Arts ..						4	4	9		21		7			29	11			77	81
Birmingham Brooklyn Farm Branch Technical College ..						29	29	16		9		8				18			51	80
Birmingham College of Technology ..						151	151	96			28	106			66	178	10		484	635
Birmingham College of Art and Crafts ..	6	10		16	15	23	38	32		132		50				56			138	176
Coventry Technical College ..												40			138	132			332	332
Coventry College of Art ..								45		62									355	355
N.W. Wilts. Area College of F.E. ..																			62	62
Salisbury and S. Wilts. College of F.E. ..								41		18		35			34	55			14	14
Salisbury School of Art and Crafts ..																			165	165
Swindon, The College ..																			18	18
Trowbridge and W. Wilts. F.E. Institute ..			1	1		28	28	41		24	12	30			23	53	35		39	67
Bromsgrove College of F.E. ..								15				9				45			69	69
Kidderminster College of F.E. ..								23				26			30	74			153	153
Malvern Technical School ..								17				22				39			78	78
Stourbridge College of F.E. ..										7					41				48	48
Dudley and Staffs. Technical College and Art School ..					2	37	39				10	17			14	45			14	53
Worcester, Victoria Institute ..								19		31					35				157	157
Bridlington Technical Institute ..										12		18	2	14	11	10			33	33
Kingston-upon-Hull Municipal Technical College ..		11		11		39	39								119	137	5		295	334
Kingston-upon-Hull Regional College of Art and Crafts ..										40	53	108			82	87			40	40
York Technical College ..			39	39				63											393	393

Establishments	Full-time Students				Part-time Students (Day)															
	H.N.D.	O.N.D.	Other Full-time	Total (Cols. 2-4)	National Certificates			Brickwork	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Climbing and Allied Trades	Slatting and Tiling	General Building	Carpentry and Joinery	Woodwork Machining	Other Wood-working Trades	Total (Cols. 9-19)	Total (Cols. 8 and 20)
					H.N.C.	O.N.C.	Total (Cols. 6 and 7)													
F.E. - Further Education	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1																				
Llanelli Technical College
Llanelli School of Art
Pibwllwyd Rural Technical College
Wrexham, Denbighshire Technical College
Connah's Quay, Flintshire Technical College
Bridgend Technical College
Neath Technical College
Rhondda Technical Institute
Treforest, Glamorgan Technical College
Cardiff College of Technology and Commerce
Merthyr Tydfil College of F.E.
Cardiff College of Art
Swansea Technical College
Swansea School of Art and Crafts
Postypool Aberystychan Mining and Technical Institute
Newport Technical College
Newtown County Technical School
TOTAL	202	274	246	722	578	3,816	4,394	6,267	330	5,481	953	5,787	60	94	4,225	12,414	885	83	36,578	40,973

APPENDIX 4

MAJOR ESTABLISHMENTS INCLUDING ART—EVENING PROVISION IN BUILDING (CLASS ENTRIES)

Establishment	Class Entries														National Certificates	
	Brickwork	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Pumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork and Machineing	Other Woodwork Trades	Total	O.N.C.	H.N.C.
F.E. = Further Education	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16*	17*
1																
North Bedfordshire College of F.E.	21	64	31		34		36				109			295		
Luton and South Beds. College of F.E.	97	50	14		57	7	81				214		15	535	x	x
Newbury, South Berks. College of F.E.	30	23			12		36				98			199		
Windsor and Maidenhead, E. Berks. College of F.E.	14				13		35				43			92		
Maidenhead School of Art and Crafts		11											17	13		
Wokingham Institute of F.E.		78	14		56	31	128				276	6		11	x	x
Reading Technical College	172													778		
Aylesbury Technical Institute	61	35					43				25			164		
Chesham Technical Institute	67	14	34		26		41				70			204		
High Wycombe College of F.E.		82			1		70				119			237		
Slough College of F.E.	93	16					113				188			400		
Wolverton College of F.E.													25	93		
High Wycombe School of Art and Crafts														25		
Cambridgeshire Technical College and School of Art	41	108	23	16	52	6	66				97			409	x	x
Eastham Carlett Park College of F.E.		7	7				36				77			127		
Crews Technical College					75		8				43			51	x	
Crews Art Classes		13									89			75		
Hyde Technical School														102		
Hyde School of Art					124									124		
Macclesfield College of F.E.							25				98			193		
Macclesfield School of Art	70				114						55			114	x	
Northwich, Verdian Technical College														93		

Establishment	Class Entries													National Certificates		
	Brickwork	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork and Machining	Other Wood-work Trades	Total	O.N.C.	H.N.C.
F.E. - Further Education	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16*	17*
1																
Northwich School of Art ..	22	116			144		119				158			144	x	
Birkenhead Technical College ..					230									415		
Birkenhead Laird School of Art ..	112	22	15				70				133			230		
Chester College of F.E. ..					141					13				352		
Chester Art School ..	91	95	36		305		259				272			141	x	
Stockport College for F.E. ..	41	200	183	19	57		44				134			1,071	x	
Wallasey Technical College ..														678		
Camborne, Cornwall Technical College ..	64	228	35	15	30		43				189			604		
Falmouth Technical Institute ..	29	12		28	20		77				104			270		
Workington College of F.E. ..	45	26	9		40		47				90			257	x	
Carlisle Technical College ..	18	67	37		67		57				136			315		
Carlisle College of Art ..														67		
Chesterfield College of Technology ..	71	38	42				65				155			371	x	x
Chesterfield College of Art ..					126	23								149		
Heanor Technical College ..	45										97			142		
Ilkeston College of F.E. ..					25		86				12			123		
Derby Technical College ..	22	105	57		360	28	78				111			373	x	x
Derby College of Art ..														388		
Barnstaple, North Devon Technical College ..	66	17	13	52	62		49			21	89	18		366		
Newton Abbot Science and Technical School ..		8									67			96		
Newton Abbot Art School ..					69						47			69		
Palgaton School of Art ..					44						51			91		
Tiverton Science, Art and Technical School ..	11						7							69		
Tiverton Art School ..					11									11		
Torquay, South Devon Technical College ..	109	54	33			39	98				129		4	466	x	

Torquay School of Art and Crafts</
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Establishment	Class Entries														National Certificates	
	Brickwork	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Pumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork Machining	Other Wood-work Trades	Total	O.N.C.	H.N.C.
F.E. = Further Education																
I																
Bristol College of Technology	81	154	89		75	27	214			15	207	69	23	954	x	x
Bristol, West of England Art College					118									118		
Gloucester Technical College	50	58	40		93		102				170	23	26	469	x	
Gloucester College of Art														93		
Basingstoke Technical College	34	10	23				15				44			126		
Farnborough (Hants) Technical College		23			17						19			42		
Winchester School of Art and Crafts														17		
Bournemouth Municipal College of Technology and Commerce	50	74	35				81				127			367		
Bournemouth Municipal College of Art					73									73		
Portsmouth College of Technology	141	140	97		297	29	144				239	56		866		
Portsmouth College of Art														297		
Southampton Technical College	185	203	67	3			229				479		33	1,199	x	x
Southampton College of Art					171	13								184		
Hereford College of F.E.	11	9			13		55				150		8	233		
Hereford School of Arts and Crafts														13		
Bishop's Stortford Technical Institute														70		
Hatfield Technical College	47	11			40		91				40			232		
Hertford, Scott House, F.E. Centre			8								43			8		
Leitchworth, N. Herts. Technical College	39	14			22		22				71			168		
Watford Technical College	45	100	80		12		72				157			454	x	x
Watford Art School														12		
St. Neots Technical Institute	13	26					2				16			57		
Wisbech Technical Institute		24									22			46		

Establishment	Class Entries													National Certificates	
														O.N.C.	H.N.C.
	Brickwork	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork and Machine	Other Woodwork Trades	Total	
F.E. = Further Education	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17*
1															
Blackpool Technical College	71	142	58		294	29	190		1		254	32		777	x
Blackpool School of Art														294	
Bolton Technical College	111	210	51	54	785	118	228				374	29		1,057	x
Bolton Municipal School of Art														903	
Bootle Municipal Technical College	39	24					39				105			207	
Bootle School of Art					90									90	
Burnley Municipal College	41	110	52		262	53	164			50	139	14		623	x
Burnley Municipal School of Art														262	
Bury Municipal Technical College	64	49	12		132	32	129			12	137			403	
Bury School of Arts and Crafts														132	
City of Liverpool College of Building	75	411	165	124			171				92	147	206	1,217	x
City of Liverpool College of Commerce	230					124	155				257			206	
Liverpool, Old Swan Technical College	179	14	14		592		92				223			766	
Liverpool, Riverdale Technical College														592	
Liverpool College of Art															
Manchester, Ancoats, Mill Street School for Building Trades Apprentices	103	89				87	351				387		165	1,017	
Manchester College of Commerce							42				46	45		165	x
Manchester Municipal College of Technology		289	147											569	x
Manchester, The Regional College of Art					525					8				525	x
Oldham Municipal Technical College	111	142	49		361	34	158				298			800	
Oldham Municipal School of Art and Crafts					523	80	201				289	9		1,256	x
Preston, Harris Institute	56	94	13				115				193			361	x
Rochdale Municipal Technical College	28	37	12		226						224	28		226	x
Rochdale Municipal School of Art							108							699	x
St. Helens Technical College	210	85	44		353						316	26		353	x
St. Helens School of Art and Crafts															
Salford Royal Technical College	116	192	102				299							1,051	x
Salford Royal Technical College, School of Art					338									338	

Southport Technical College	
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Establishment	Class Entries													National Certificates		
	Brickwork	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork	Other Woodwork	Total	O.N.C.	H.N.C.
I																
Wandsworth, L.C.C. Wandsworth Technical College	..	76	37				57				163		45	378	x	
Westminster, L.C.C. Westminster Technical College	..	139					156			10	184			139		
Woolwich Polytechnic	83	101	62		114									596	x	x
Woolwich Polytechnic School of Art											114		
Acton Technical College	..	5									18			23		
Ealing Technical College	..	26					159				135			411		
Ealing School of Art		93									93		
Enfield Technical College				85				74	29	35	138		
Harrow Technical College	..	170			98						87			342		
Hornsey School of Art and Crafts	..	15									27			98		
Heston and Isleworth, Spring Grove Polytechnic	..	48	19								70	44		42		
Southall Technical College	..	85	45		81	20	180				193	48		181	x	x
Tottenham Technical College	..	97	53		88		126				186	20		792	x	x
Twickenham Technical College	..	100	94		128	41	292				237	25		639	x	x
Willesden Technical College											1,268	x	x
King's Lynn Technical College	..	36	7		18		28				87		6	238		
Great Yarmouth Technical College	..	46	5		60		30				92		9	305		
Great Yarmouth College of Art											60		
Norwich City College and Art School	..	94	49		145		101				144			602	x	x
Corby Technical College	..	29			33		15				45			122		
Kettering Technical Institute	..	64	15				44				72			224		
Wellingborough Technical College	..	70	10		68		22				59			294		
Northampton College of Technology	..	114	30			52	130				193	20		539		
Northampton School of Art		122									122		
Ashington County Mining School	..	29	5								47			81		

Barwick-on-Tweed Technical Institute	..	..	..	9	191	112	217	90	274	15	38	40	47
Blyth Technical Institute	..	..	..	..	..	..	..	..	..	..	..	..	90
Newcastle College of Commerce	..	..	..	..	..	..	..	..	..	..	..	..	40
Rutherford College of Technology, Newcastle on Tyne	..	..	..	..	..	..	..	..	..	..	..	..	1,008
Tynemouth Technical and Commercial Institute	..	..	..	..	..	..	..	..	..	..	..	..	27
Beeton College of F.E.	..	..	..	37	..	..	..	..	..	..	75	112	..
Mansfield Technical College	..	..	..	211	82	56	75	..	132	..	226	707	..
Mansfield School of Art	..	..	..	..	..	..	..	..	..	..	..	75	..
Newark, The County Technical College	..	..	..	..	17	5	..	..	..	..	41	63	..
Newark School of Art	..	..	..	..	..	..	..	..	..	..	..	65	..
Workshop, The County Technical College	..	..	..	186	..	..	..	..	84	..	303	629	..
Nottingham and District Technical College	..	..	..	175	167	30	56	..	442	..	323	1,443	..
Nottingham, People's College of F.E.	..	..	..	140	63	29	..	..	250	..	173	655	..
Nottingham College of Art and Crafts	..	..	..	..	38	..	514	..	..	119	..	552	..
Banbury, North Oxfordshire Technical College and School of Art	..	..	..	22	7	11	19	..	44	..	42	134	..
Henley Technical Institute	..	..	..	..	..	..	..	..	..	..	..	11	..
Oxford College of Technology, Art and Commerce	..	..	..	40	24	..	34	..	67	..	92	257	..
Peterborough Technical College	..	..	..	38	16	..	24	..	54	..	46	178	..
Oakengates, The Walker Technical College	..	..	..	..	..	..	..	..	25	..	76	101	..
Shrewsbury, Hadbrook, Shropshire College of Domestic Science and Dairy Work	..	..	..	..	18	..	..	..	30	..	64	112	..
Shrewsbury Technical College	..	..	..	70	58	27	..	..	89	..	102	346	..
Shrewsbury School of Art	..	..	..	..	..	..	57	..	..	..	..	57	..
Bridgwater Technical and Art Institute	..	..	..	63	..	..	31	..	37	..	135	266	..
Frome Technical and Art Institute	..	..	..	..	1	..	..	..	2	..	28	31	..
Taunton Technical College	..	..	..	54	44	..	..	..	37	..	117	252	..
Taunton, The Somerset College of Art	..	..	..	..	..	..	..	..	..	..	..	33	..
Weston-super-Mare Technical and Art Institute	..	..	..	..	32	..	..	..	79	..	41	152	..
Weston-super-Mare School of Art	..	..	..	..	..	..	..	..	..	..	..	30	..
Yeovil Technical College and School of Art	..	..	..	44	..	..	..	..	45	..	113	248	..
Bath Technical College	..	..	..	46	62	16	69	..	49	..	108	382	..
Bilston School of Art	..	..	..	..	..	..	33	..	..	..	..	33	..
Brierley Hill Art Classes	..	..	..	..	..	..	50	..	..	..	..	50	..
Cannock Chase Mining and Technical College	..	..	..	12	12	..	..	..	..	..	..	24	..

Establishment	Class Entries											National Certificates				
	Brickwork	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork and Machine	Other Woodwork Trades	Total	O.N.C.	H.N.C.
F.E. - Further Education																
I																
Leek School of Art and Crafts	2	29			20						34			83		
Newcastle-under-Lyme School of Art and Crafts					34									34		
Stafford County Technical College	25	19					67				69			180		
Stafford County School of Art and Crafts					24									24		
Thunworth College of F.E.	7	12	6				5				28			58		
Wednesbury County Technical College										2				2		
Burton-on-Trent Technical College	100	22				7	56				246	47	7	485		
Burton-on-Trent School of Art and Crafts					122									122		
Sneadwick, The Chance Technical College	62	38	19				58				75			252		
Stoke-on-Trent, North Staffordshire Technical College	449	207	90		327	168	198	10	25	7	657	56		2,194	x	x
Stoke-on-Trent, Stoke School of Art		48												48		
Walsall Technical College	60	74	29				99				213	15		490	x	x
Walsall Municipal School of Art and Crafts					129									129		
West Bromwich Technical College		6					53				33			92		
West Bromwich, Ryland Memorial School of Art					41									41		
Wolverhampton and Staffordshire Technical College	19	106	58				74				75	20		352	x	x
Wolverhampton College of Art					212									212		
Wolverhampton, Walford College of F.E.	17	30	107				37				35			226		
Lowestoft Technical Institute	33	35	14				14				47			143		x
Lowestoft School of Art and Crafts		9			23									32		
Ipswich School of Technology	76	100					58			81	94			433		
Ipswich School of Art					116									116		
Bury St. Edmunds Technical Institute	8	23	16			24					3			50		
Epsom and Ewell School of Art and Crafts					63									63		x
Ewell County Technical College	20	87	30				31			6	58	8		240	x	x
Guildford County Technical College	44	52	40		79		105				116			357	x	
Guildford School of Art														79		

Rethall Technical College	..	..	..	7	52	94	54	58	76	42	12	5	125
Richmond Institute of F.E.	..	..	..	..	..	..	..	..	..	34	..	..	34
Wimbledon Technical College	..	..	..	..	52	116	57	..	137	167	..	..	516
Croydon Technical College	..	..	..	..	59	..	..	..	126	202	..	..	565
Croydon School of Art	..	..	..	..	..	..	..	..	..	..	..	..	58
Beckhill-on-Sea Building Apprenticeship Classes	..	..	..	7	..	..	..	..	..	42	..	..	49
East Sussex Day Release Classes	..	..	..	..	..	..	..	..	58	..	..	..	100
Lewes, Building Apprenticeship Classes	..	..	..	..	14	..	..	..	42	57	..	..	113
Brighton Technical College	..	..	..	97	8	..	74	188	154	297	23	..	653
Brighton College of Art and Crafts	..	..	..	..	..	..	..	..	..	..	..	..	188
Eastbourne Technical Institute	..	..	..	..	..	..	..	..	..	..	..	..	38
Eastbourne School of Art	..	..	..	30	23	..	..	38	61	72	..	..	197
Hastings Technical Institute	..	..	..	..	..	..	..	36	..	..	..	..	36
Hastings School of Art	..	..	..	..	..	..	..	..	78	63	..	..	267
Bognor Regis Technical Institute	..	..	..	27	56	..	6	37	60	138	..	..	284
Horsham Technical Institute	..	..	..	8	66	..	..	12	..	..	..	..	14
West Sussex College of Art and Crafts	..	..	..	..	..	..	..	14	70	107	..	..	234
Worthing Technical Institute	..	..	..	15	18	..	44	..	..	..	..	..	95
Lenington Spa School of Art and Crafts	..	..	..	..	..	..	..	95	53	61	..	..	270
Nuneaton Technical College and School of Art	..	..	..	4	33	..	3	116	53	103	..	..	266
Rugby College of Technology and Art	..	..	..	..	64	..	..	46	..	20	..	..	20
Stratford-on-Avon Technical School	..	..	..	..	..	..	..	..	32	92	..	..	185
Birmingham, Bordesley Green Technical Institute	..	..	..	32	..	..	29	..	..	..	..	..	56
Birmingham, Bournville and Northfield Commercial Institute	..	..	..	56	72	73	66	38	157	289	62	..	757
Birmingham, Brooklyn Farm Branch Technical College	..	..	..	..	..	..	..	..	..	..	..	..	49
Birmingham, City of Birmingham College of Commerce	..	..	..	..	..	..	..	..	133	143	40	..	695
Birmingham College of Technology	..	..	..	207	42	..	130	415	..	..	..	..	415
Birmingham College of Art and Crafts	..	..	..	..	..	..	..	..	85	13	..	..	101
Birmingham, Handsworth Technical College	..	..	..	3	..	..	..	..	129	337	..	..	664
Coventry Technical College	..	..	..	52	102	..	44	224	..	..	..	..	224
Coventry College of Art	..	..	..	..	..	..	..	..	..	..	..	..	134
Kendal, The Allen Technical and Art Institute	..	..	..	21	..	..	15	24	42	32	..	..	24
North Wilts. Area College of F.E.	..	..	..	..	..	..	..	..	63	109	..	..	284
Salisbury and South Wilshire College of F.E.	..	..	..	50	37	..	25	..	..	..	..	..	34
Salisbury School of Art and Crafts	..	..	..	..	..	..	..	..	71	116	..	..	318
Swindon, The College	..	..	..	38	52	..	19	63	..	..	..	..	63
Swindon, The College Art School	..	..	..	..	..	..	..	..	..	..	..	..	..

Establishment	Class Entries														National Certificates	
	Brickwork	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork	Other Woodwork Trades	Total	O.N.C.	H.N.C.
F.E. - Further Education	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16*	17*
1																
Trowbridge and W. Wilts. F.E. Institute	64	39	3		44	16	77				161			404		
Bromsgrove College of F.E.	22	16			10		26				73			147		
Halesowen College of F.E.											14			14		
Kidderminster College of F.E.	25	11					20			24	20	16		105		
Malvern Technical School							9				44			20		
Oldbury College of F.E.											10			10		
Redditch College of F.E.	42	12					47				90			191		
Stourbridge College of F.E.					51									51		
Stourbridge School of Art	72	39			52		54				120			337	x	
Dudley and Staffordshire Technical College and Art School Worcester, Victoria Institute	41				28		40				67			176		
Beverley Technical Institute											58			58		
Bridlington Technical Institute	72	19	15		11						46			163		
Kingsdon-upon-Hull College of Commerce													84	84		
Kingsdon-upon-Hull Municipal Technical College	224	191	50				257			19	502	111		1,354	x	x
Kingsdon-upon-Hull Regional College of Art and Crafts					313									313		
York Technical College	258	65	38		291	30	119				234		45	789	x	x
York School of Art and Crafts														291		
Easton Technical Institute	11						9				14			34		
Scarborough Technical Institute	89	23	20				96				164			392	x	
Scarborough Art School					124									124		
Middlesbrough, Constanine Technical College	149	83	20		139						208			599	x	
Middlesbrough College of Art		11			161									172		
Castleford, The Whitwood Mining and Technical College Craven Institute of F.E.	57	18					58			29	118			251		
							5				24			58		

Establishment	Class Entries												National Certificates	
	Brickwork	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork and Machining	Other Woodwork Trades	Total
F.E. = Further Education														
1														
Llanelli Technical College	48	61	28		54	26	24				114			275
Llanelli School of Art and Crafts	6						4				24			80
Plowlyd Rural Technical College														34
Cobwyn Bay Day Release Classes	27	34			36	7	21		7		41			146
Wrexham, Denbighshire Technical College					16		8			23	35			109
Connah's Quay, Flintshire Technical College	60	17	30		20		27				53			207
Bridgend Technical College	77	75	53		85	14	94				239	19		656
Neath Technical College	141	24	12		74	24	52				167	20		514
Pentardawe Mining and Technical Institute												74		74
Port Talbot College of F.E.		11												11
Rhondda Technical Institute	76	23	23	15	83		33				152	20		425
Treforest, Glamorgan Technical College	89	20	9		35		105				113			371
Cardiff College of Technology and Commerce	118	75		11	505	35	164				219	36	19	677
Cardiff College of Art	22	24			100	24	12				60			505
Merthyr Tydfil College of F.E.	22	242	45		61						36	16		242
Swansea Technical College														361
Swansea School of Art and Crafts														61
Pontypool, Abersychan Mining and Technical Institute	14	4			50	4	38				102	11		212
Newport Technical College	107	51	31		119	29	130				234			593
Newport School of Arts and Crafts														119
TOTAL	13,849	16,716	6,717	696	25,107	2,450	20,921	21	121	815	33,139	2,627	1,669	124,848

*The places providing wholly evening O.N.C. and H.N.C. courses have been marked in columns 16 and 17. Those places which provide an evening National Certificate course as part of a combined part-time day and evening course only have not been marked.

APPENDIX 4 EVENING INSTITUTE—EVENING PROVISION IN BUILDING (CLASS ENTRIES)

Establishment	Class Entries													
	Brickwork	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork and Machining	Other Wood-working Trades	Total
I	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BERKSHIRE Wantage E.I.		21									19			40
CAMBRIDGESHIRE March E.I.		20												20
CHESHIRE Runcorn Technical E.I. Widnaw E.I.		22	9		147									147 31
CORNWALL Carnwall Evening Classes Corwall Evening Institutes St. Austell Technical Institute Truro Technical E.I.		19 36 19			14						11 64 56		43	11 83 106 62
CUMBERLAND Millom Evening Institute		13												13
DERBYSHIRE Buxton Evening Institute Long Eaton Grammar E.I. Long Eaton, Tamworth Road E.I.		13 5	10		19					25				23 5 19
DEVONSHIRE Axminster E.I.		14	41											80

Class Entries

Establishment	Brickwork	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Woodwork and Joinery	Other Woodwork	Total
E.I. = Evening Institute	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Dartmouth E.I.		10												10
Bolton Technical Institute ..		58												94
Kingbridge E.I.		12												20
South Molton E.I.										37				37
Totnes Evening Institute		18									27			45
DORSET														
Shaftesbury E.I.										23				23
Sturminster Newton E.I. ..		14												14
CO. DURHAM														
Hetton-le-Hole Co. Infants School ..					73									73
ESSEX			7											7
Clacton-on-Sea Senior E.I. ..														59
East Ward County Youth Centre ..		19									59			19
Saffron Walden Senior E.I. ..														19
Walthamstow Adult Classes ..	19	49												49
H.M. Prison, Chelmsford														
GLoucestershire														
H.M. Prison, Leyhill		34			55									89
HAMPSHIRE														
Aldershot E.I.		21	21		91									42
H.M. Prison, Winchester ..														91
HUNTINGDONSHIRE														
St. Ives E.I.		13									13			13
H.M. Borstal Institute, Caynes Hall ..														13
KENT														
Chislehurst E.I.											52			52

H.M. Borstal Institute, Rochester	..	13		23		13	26
Medway College of Art E.L.	..						23
LANCASHIRE							
Droyloden E.L.	..					16	16
Ulverston E.L.	..					15	30
Warrilow Technical Institute	..			87	34	107	228
Boole, St. James E.L.	..					18	18
Liverpool, Childwall E.L.	..					18	18
Liverpool, Wellington Rd. E.L.	..					148	148
LINCOLNSHIRE, KESTVEN							
Sleaford Evening Institute	..		12				12
LINCOLNSHIRE, LINDSEY							
Barton-on-Humber C. School	..		26			7	33
Cleethorpe Technical Institute	..			16		19	19
Skegness E.L.	..		15			26	57
LONDON							
Bethnal Green Junior, Comm. and Technical Institute	..					53	53
Hackney Junior, Comm. and Technical Institute	..					77	77
Islington Junior, Comm. and Technical Institute	..					76	76
Islington Junior, Comm. and Technical Institute	..					195	195
Lewisham Junior, Comm. and Technical Institute	..					32	32
Paddington Junior, Comm. and Technical Institute	..					118	118
Upper Tooting, Junior Comm. and Technical Institute	..					17	17
Victoria Junior, Comm. and Technical Institute	..					56	56
Clapham Junior, Comm. and Technical Institute	..						
MIDDLESEX						11	11
H.M. Borstal Institute, Feltham	..						
NORTHUMBERLAND							
Loughington E.L.	..			19			19
Wooler E.L.	..		9				9
NOTTINGHAMSHIRE							
Lougham E.L.	..			27			27

[illegible]

APPENDIX 4

Establishment	Class Entries													
	Brick-work	Building Construction and Drawing	Building Science	Masonry	Painting and Decorating	Plastering	Plumbing and Sanitation	Glazing and Allied Trades	Slating and Tiling	General Building	Carpentry and Joinery	Wood-work and Machining	Other Wood-working Trades	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
GLAMORGAN			16				10				24			40
Aberdare Boys' Grammar School ..														10
Barry and District Schools ..														10
PENMAENMOR		10												10
Fishguard Technical Institute ..		33									10			43
Haverfordwest Technical Evening Institute ..														19
Milford Haven Technical Evening Institute ..		10			6						3			51
Pembroke Dock Technical Institute ..		22			13						16			13
Tenby Technical Evening Institute ..		13												13
	113	931	218	26	919		283			99	2,196		43	4,828

APPENDIX 5

Present Occupation, and Previous Full-time Education, of Students following Part-time Courses for Ordinary and Higher National Certificates in Building

ORDINARY NATIONAL CERTIFICATE

Occupation on entering Final Year of Course	Totals		Modern		Technical		Grammar	
	1951	1954	1951	1954	1951	1954	1951	1954
Surveyors	318	330	68	76	127	119	123	135
Carpenters and Joiners	468	409	236	231	176	127	56	51
Bricklayers	146	144	62	50	63	56	21	38
Plumbers	54	53	13	21	37	14	4	18
Plasterers	8	4	4	3	3	1	1	0
Painters and Decorators	8	4	5	1	1	3	2	0
Builders' Apprentices	34	33	6	2	13	14	15	17
Builders' Clerks	161	128	54	44	50	32	57	52
Architects' Offices	31	29	8	6	8	10	15	13
Draughtsmen	300	389	72	99	130	186	98	104
Structural and Civil Engineers ..	38	86	7	17	10	23	21	46
Sanitary Inspectors	12	5	1	1	1	0	10	4
Foremen	19	38	10	30	6	4	3	4
Teachers	9	7	2	4	4	1	3	2
Miscellaneous	146	93	64	37	41	25	41	31
TOTAL ..	1,752	1,752	612	622	670	615	470	515

HIGHER NATIONAL CERTIFICATE

Occupation on entering Final Year of Course	Totals		Modern		Technical		Grammar	
	1951	1954	1951	1954	1951	1954	1951	1954
Surveyors	133	215	42	43	45	91	46	81
Carpenters and Joiners	201	141	112	67	67	52	22	23
Bricklayers	49	39	20	13	22	17	7	9
Plumbers	15	12	7	4	6	6	2	2
Plasterers	4	2	3	0	0	0	1	2
Painters and Decorators	2	2	2	1	0	1	0	0
Builders	30	19	9	8	10	3	11	8
Builders' Clerks	43	74	17	23	9	20	17	31
Architects' Offices	18	12	6	5	9	3	3	4
Draughtsmen	115	172	35	48	56	75	24	49
Structural and Civil Engineers ..	20	33	7	14	8	8	5	11
Foremen	19	11	11	6	5	2	3	3
Teachers	14	21	7	12	5	4	2	5
Clerks of Works	13	10	10	4	2	5	1	1
Miscellaneous	47	40	16	13	12	13	19	14
TOTAL ..	723	803	304	261	256	300	163	242

* These totals are of the great majority of students entering their final year; a few may be excluded whose records are not submitted. This partly explains the discrepancies between these totals and those of the number of entries for National Certificate Examinations.

APPENDIX 6

TABLE 1

Number of Craftsmen and Apprentices (excluding electricians and electrical apprentices) employed by firms making returns (Ministry of Works Census)

Date of Census	Total Craft Force (Craftsmen and Apprentices)	Total Number of Boys Employed to Learn a Craft		
		Under Written Indentures	Under Verbal Agreements	Total
August 1949 ..	656,000	47,730	37,630	85,360
May 1950 ..	643,000	52,110	38,790	90,900
May 1951 ..	635,000	52,190	33,610	85,800
May 1953 ..	607,000	48,310	38,550	86,860
May 1954 ..	607,000	48,190	37,120	85,310
September 1955	612,000	45,820	40,310	86,130

TABLE 2

Analysis by Crafts, at May 1954

Craft				
Carpenters and Joiners ..	160,000	17,470	10,820	28,290
Bricklayers ..	119,000	11,140	5,630	16,790
Slaters and Tilers	12,000	850	820	1,670
Plasterers ..	34,000	2,560	1,660	4,220
Painters ..	130,000	5,870	7,840	13,710
Plumbers and Glaziers ..	59,000	6,660	7,040	13,700
Masons ..	10,000	1,020	580	1,600
Other B. and C.E. Craftsmen ..	83,000	2,620	2,710	5,330
TOTAL ..	607,000	48,190	37,120	85,310

TABLE 3

Analysis by Crafts, at September 1955

Craft	Number of Craftsmen and Apprentices	Total Number of Boys Employed to Learn a Craft		
		Under Written Indentures	Under Verbal Agreements	Total
Carpenters and Joiners ..	162,000	16,310	11,720	28,030
Bricklayers ..	120,000	11,170	6,660	17,830
Slaters and Tilers	12,000	790	930	1,720
Plasterers ..	34,000	2,550	1,740	4,290
Painters ..	131,000	5,170	8,940	14,110
Plumbers and Glaziers ..	60,000	6,620	7,810	14,430
Masons ..	10,000	850	550	1,400
Other B and C.E. Craftsmen ..	83,000	2,360	1,960	4,320
TOTAL ..	612,000	45,820	40,310	86,160

APPENDIX 7

BUILDING APPRENTICESHIP AND TRAINING COUNCIL

TABLE 1

Particulars of the Registration of Apprentices, from November 1945 to 31st December, 1952, who were subject to indentured apprenticeship under the National Apprenticeship Scheme

	1	2	3	4	5	6	7	8	9	10	11	
	Northern Counties	York- shire	Mid- lands	Liver- pool	London	Southern Counties	South Wales and Mon.	North Western Counties	Eastern Counties	South Western	Scot- land	
Carpenter	1,291	1,272	4,640	791	4,454	5,079	1,372	3,700	2,464	3,429	5,212	Total
Bricklayer	760	962	2,931	482	1,371	2,160	914	1,868	1,400	1,031	2,288	33,704
Plumber	342	455	1,696	337	1,296	2,437	336	1,118	868	1,200	1,936	16,167
Painter	392	411	1,755	281	630	1,544	545	1,643	656	1,362	1,969	13,504
Plasterer	168	137	348	184	418	237	426	435	82	281	1,058	12,160
Mason	23	67	51	70	170	62	71	75	30	646	371	3,754
Slater	133	51	80	33	69	12	6	130	11	8	791	1,616
Wood Cutting												1,324
Machinists	50	37	251	39	253	135	42	249	75	118	74	1,323
Glazier	5	3	5	14	7	9	—	—	7	2	16	293
Other Crafts	59	28	77	48	91	117	1	55	23	47	50	1,369
TOTAL	3,223	3,423	11,834	2,279	8,759	11,792	3,713	9,273	5,616	8,124	13,745	85,234

Completion Certificates issued by B.A.T.C.: England and Wales .. 27,681
Scotland .. 4,610

32,291

TABLE 2

Registration from 1st January, 1953, to 30th June, 1955, by the National Joint Apprenticeship Board

	1	2	3	4	5	6	7	8	9	10					
	Northern Counties	York- shire	Mid- lands	Liver- pool	London	Southern Counties	South Wales and Mon.	North Western	Eastern Counties	South Western	Mastic Asphalt	National Glaziers	National Plum- bers	Others (Un- classi- fied)	Total
Carpenters ..	441	724	1,712	432	1,143	1,463	546	1,272	913	1,154	—	—	—	—	9,800
Bricklayers ..	361	592	1,230	269	381	808	353	795	668	502	—	—	—	—	5,959
Plumbers ..	83	171	534	203	337	716	128	289	289	391	—	—	274	—	3,421
Painters ..	107	252	621	163	148	356	199	449	207	317	—	—	—	—	2,819
Pastors ..	115	161	225	102	116	103	128	283	101	100	—	—	—	—	1,434
Masons ..	16	59	12	31	41	22	22	34	8	292	—	—	—	—	537
Slaters ..	71	60	24	17	38	5	2	60	13	3	—	—	—	—	293
Wood Cutting ..	19	42	74	29	103	50	13	75	30	54	—	—	—	—	489
Machinists ..	—	1	1	—	—	1	—	—	—	—	—	31	—	—	34
Glaziers ..	—	91	91	39	100	67	9	62	68	37	174	—	—	139	919
Other Crafts ..	42	91	91	39	100	67	9	62	68	37	174	—	—	139	919
Total ..	1,255	2,153	4,524	1,285	2,407	3,591	1,400	3,319	2,303	2,850	174	31	274	139	25,705

TABLE 3

Registration from 1st January, 1953, to 30th June, 1955, by the General Council Administering the Apprenticeship Scheme of the Building Industry in Scotland

Carpenters	..	..	..	1,364
Bricklayers	..	..	..	974
Plumbers	..	..	..	311
Painters	..	..	..	215
Plasterers	..	..	..	328
Masons	..	..	..	147
Sisters	..	..	..	191
Wood Cutting Machinists	..	..	..	24
Terrazo	..	..	..	26
Glaziers	..	..	..	2
Total	..	..	..	3,582

Particulars of indentured apprenticeships registered with B.A.T.C. and with the Industry since January 1953

Year	Total	Carp.	Brk.	Pbr.	Ptr.	Flss.	Mss.	Slt.	Wood Cutting Mach.	Terr.	Pw.	Elec.	Heat and Vent.	Fr. Plstr.	Metal Worker	Nat. Asphalt	Nat. Glas.	Nat. Pbr.	Others
1946	7,028	3,309	1,007	1,272	729	256	67	131	89	1	7	13	6	—	—	96	15	—	—
1947	16,259	6,846	3,013	2,835	1,961	656	168	284	269	7	30	29	4	—	—	65	92	—	—
1948	12,482	5,941	2,235	1,482	1,877	506	167	167	205	—	37	37	8	9	—	130	62	619	—
1949	11,284	4,287	1,847	1,606	1,941	579	239	176	153	8	35	31	1	15	7	133	36	190	—
1950	12,447	4,757	2,510	1,608	2,126	584	314	166	182	19	28	59	6	14	3	126	43	322	—
1951	13,600	4,819	2,784	1,714	1,921	603	305	203	223	6	37	23	2	18	8	89	25	220	—
1952	12,234	4,665	2,771	1,504	1,575	570	376	197	202	6	23	36	—	18	5	134	20	132	—
B.A.T.C. TOTAL																			
England, Scotland and Wales	85,234	33,704	16,167	12,021	12,160	3,754	1,636	1,324	1,323	47	197	228	27	74	23	773	293	1,483	—
1953 M.A.B. England and Wales Scotland	9,516 1,272	3,309 455	2,366 379	1,608 105	1,048 77	480 111	202 61	142 68	187 10	— 6	26 —	26 —	— —	6 —	5 —	86 —	16 —	104 —	215 —
TOTAL	10,788	3,964	2,745	1,203	1,125	591	263	210	197	6	26	26	—	6	5	86	16	104	215
1954 M.A.B. England and Wales Scotland	11,010 1,606	4,201 630	2,480 427	1,374 144	1,192 74	634 156	224 59	115 90	178 9	— 15	— —	— —	— —	— —	— —	88 —	18 2	170 —	336 —
TOTAL 1955 to 30th June	12,616	4,831	2,907	1,518	1,266	790	283	205	187	15	—	—	—	—	—	88	20	170	336
1955 to 30th June M.A.B. England and Wales Scotland	5,179 704	2,090 279	1,113 168	675 62	579 64	320 61	111 27	36 33	124 5	— 5	— —	— —	— —	— —	— —	— —	— —	131 —	—
TOTAL	5,883	2,369	1,281	737	643	381	138	69	129	5	—	—	—	—	—	—	—	—	131

APPENDIX 8

BUILDING APPRENTICESHIP AND TRAINING
COUNCIL WELFARE FUND*Awards made in respect of Prizes, Scholarships and Craft Competitions*

TABLE 1

Prizes

Year	Number of Prizes Awarded	Value of Prizes
1947	371	180 at 25/- 191 at 17/6
1948	265	265 at 25/-
1949	441	160 at 25/- 281 at 17/6
1950	435	166 at 25/- 269 at 17/6
1951	525	160 at 30/- 365 at 20/-
1952	377	147 at 40/- 124 at 30/- 106 at 20/-
1953	466	115 at 40/- 119 at 30/- 232 at 20/-

Total number of Prizes Awarded, 2,880.

TABLE 2

Scholarships

Year	Higher National Diploma Courses	Degree Courses	Total Number of Scholarships
1947	3	1	4
1948	—	4	4
1949	1	4	5
1950	3	3	6
1951	4	2	6
1952	—	4	4
1953	3	1	4
1954	4	—	4
	18	19	37

TABLE 3
Craft Competitions

Year	Event	Nature of Competitions
1951	Burton-upon-Trent Plumbing Exhibition	Plumbing
1951	Chester Building Exhibition	Bricklaying
1952	Manchester Building Exhibition	Various Crafts
1952	Glasgow Building Exhibition	Various Crafts
1952	Northampton Open Week	Bricklaying
1952	Building Today Exhibition, East Ham Technical College	Various Crafts
1953	Halifax Building Industries Exhibition	Various Crafts
1953	Aberdeen Building Week	Various Crafts
1953	Olympia Building Exhibition	Various Crafts
1954	Willesden Building Exhibition	Various Crafts
1954	Nottingham Plant Exhibition	Bricklaying
1954	Sheffield Building Exhibition	Various Crafts
1954	Reading Building Plant Exhibition	Various Crafts
1954	Manchester Building Exhibition	Various Crafts
1955	Cumberland Building Exhibition	Various Crafts
1955	Doncaster Building Exhibition	Various Crafts
1955	Olympia Building Exhibition	Various Crafts

BUILDING APPRENTICESHIP AND TRAINING COUNCIL

APPRENTICE MASTER SCHEME

Particulars of local authorities, projects and boys engaged and subsequently transferred for continued apprenticeship in the building industry during the operation of the scheme from 12th April, 1945, to 31st March, 1952.

Number of local authorities who operated the Scheme	117
Number of projects completed Original, 140; Extensions, 182; Total	322
Number of buildings completed, Houses, Nursery Block, Shops, Garages and School Kitchens Original, 1,175; Extensions, 1,915; Total	3,090
Total number of boys engaged on the Scheme	7,500
Total number of boys transferred for continued apprenticeship to the building industry	7,446

The local authorities who operated the Scheme, the number of houses, etc., erected, and the number of boys engaged, were as follows:

Local Authority	Number of Houses, etc., Erected	Number of Boys Engaged	Local Authority	Number of Houses, etc., Erected	Number of Boys Engaged
Aberdare	42	77	TOTAL B/F 30	887	2,252
Ashton-under-Lyne	20	57	Dartford	22	43
Barking	34	59	Deame	12	31
Barnsley	32	76	Derby	63	105
Barrow-in-Furness	6	27	Dewsbury	8	23
Basingstoke	4	14	Dudley	10	45
Beckenham	3	22	Ealing	51	94
Bedwellty	38	22	East Ham	12	29
Bexley	22	42	Ebbw Vale	34	40
Billerica	10	33	Erith	34	23
Blackpool	7	35	Esher	26	33
Bolton	36	210	Eton	4	27
Bournemouth	8	26	Exeter	24	145
Bradford	16	30	Fareham	14	34
Brentford and Chiswick	33	34	Farnborough	15	51
Bridlington	30	77	Feltham	6	16
Brighton	14	62	Gellygaer	42	31
Bromley	22	44	Gillingham	14	18
Bury St. Edmunds	6	19	Grantham	16	40
Caeaphilly	46	77	Grimsby	18	66
Camberwell	78	190	Guildford	38	128
Cardiff	173	412	Guildford R.D.C.	8	22
Chatham	48	183	Hackney	44	53
Cheltenham	32	97	Halifax	8	30
Chislehurst	29	34	Haslemere	6	18
Christchurch	32	98	Hastings	25	110
Conisborough	12	31	Hereford	3	15
Coventry	12	71	Hampshire C.C. (Basingstoke)	1	10
Croydon	30	83			
Dagenham	12	10			
TOTAL C/F 30	887	2,252	TOTAL C/F 57	1,445	3,532

Local Authority	Number of Houses, etc., Erected	Number of Boys Engaged	Local Authority	Number of Houses, etc., Erected	Number of Boys Engaged
TOTAL B/F 57	1,445	3,532	TOTAL B/F 85	2,058	5,091
Hornchurch ..	6	30	Plymouth ..	179	316
Hornsey ..	6	20	Pontardawe ..	60	52
Huddersfield ..	4	17	Pontefract ..	6	34
Hull ..	65	185	Pontypool ..	28	51
Ilford ..	15	22	Poole ..	13	33
Kent Education Committee ..	3	—*	Portsmouth ..	59	207
Keighley ..	16	27	Reading ..	11	46
Kidderminster ..	27	76	Rochester ..	22	18
Leamington ..	14	74	Rotherham ..	20	63
Leeds ..	34	30	St. Helens ..	14	54
Lewisham ..	4	12	Scunthorpe ..	48	120
Lincoln ..	25	82	Sheffield ..	44	99
Liverpool ..	70	260	Smethwick ..	10	51
Llanelli ..	72	148	Southampton ..	97	331
London County Council ..	2	10	South Shields ..	10	18
Macclesfield ..	15	58	Stafford ..	12	31
Merthyr Tydfil ..	44	93	Stourbridge ..	8	21
Merton and Morden ..	17	41	Swansea ..	123	238
Mexborough ..	12	34	Swinton ..	6	16
Ministry of Works:			Tamworth ..	14	32
Chatham ..	1	6	Wallasey ..	24	84
Dagenham ..	1	2	Walsall ..	19	44
East Ham ..	1	20	Wandsworth ..	10	20
Gillingham ..	1	8	Watford ..	4	15
North Shields ..	1	12	Wembley ..	20	64
Neath Borough ..	44	62	West Bridgford ..	14	64
Neath R.D.C. ..	42	54	Winchester ..	6	10
Newport ..	43	127	Woolwich ..	55	60
Nuncaton ..	28	49	Worcester ..	4	39
			Wrexham ..	20	36
			York ..	42	108
			Ystradgynlais ..	30	34
TOTAL C/F 85	2,058	5,091	TOTAL 117	3,090	7,500

* Included in Chatham Scheme.

APPENDIX 10

BUILDING APPRENTICESHIP AND TRAINING COUNCIL
BUILDING CRAFT TRAINING
HOME OFFICE APPROVED SCHOOLS

Position as at 30th June, 1956

School	Type	Date Building Craft Training Recognised by B.A.T.C. for Apprenticeship purposes	Crafts in which training is given	Boys transferred to Building Industry		
				Apprenticed	Not Apprenticed	Total
Edmond Castle, Wetheral, Carlisle	S	4th January, 1947	Bricklaying; Carpentry and Joinery; Painting and Decorating; Plastering; Plumbing	35	23	58
Risley Hall, Risley, Derbys.	I	3rd March, 1949	Bricklaying; Carpentry and Joinery; Plumbing	40	19	59
Ardale, Grays, Essex	S	3rd June, 1949	Bricklaying; Painting and Decorating; Plastering; Plumbing	40	84	124
Red Bank, Newton-le-Willows, Lancs.	I and C	1st August, 1950	Bricklaying; Carpentry and Joinery; Painting and Decorating; Plastering; Plumbing	49	45	94
Farrington House, Nr. Exeter	S	3rd August, 1950	Bricklaying; Carpentry and Joinery	19	5	24
Fyde Farm, Blackpool	S	2nd October, 1950	Bricklaying; Carpentry and Joinery; Painting and Decorating	19	25	44
TOTAL C/F				202	201	403

Symbols used in type of school: C = Classifying. I = Intermediate. S = Senior.

School	Type	Date Building Craft Training Recognised by B.A.T.C. for Apprenticeship purposes	Crafts in which training is given	Boys transferred to Building Industry		
				Apprenticed	Not Apprenticed	Total
TOTAL B/F				202	201	403
Dobroyd Castle, Todmorden, Lancs.	S	18th October, 1950	Bricklaying; Carpentry and Joinery; Painting and Decorating	12	48	60
*Devon and Exeter, N.r. Exeter	I	18th October, 1950	Bricklaying; Carpentry and Joinery	43	21	64
St. Joseph's, Nantwich, Cheshire	I	1st January, 1952	Carpentry and Joinery; Painting and Decorating; Plumbing	4	16	20
St. Benedict's, Reading, Berks.	S	18th February, 1952	Bricklaying; Carpentry and Joinery; Plumbing	21	15	36
Court Lees, Godstone, Surrey	I	18th August, 1952	Bricklaying; Carpentry and Joinery; Painting and Decorating; Plumbing	18	5	23
Park House, Godalming, Surrey	S	18th August, 1952	Carpentry and Joinery; Painting and Decorating	20	23	43
*St. John Fisher, Hitchin, Herts.	I	19th August, 1952	Bricklaying; Carpentry and Joinery	1	9	10
Red House Farm, Buxton, Norwich	I	5th November, 1952	Bricklaying; Carpentry and Joinery	1	4	5
Kerrison, Eye, Suffolk	S	5th December, 1952	Bricklaying; Carpentry and Joinery	7	5	12
TOTAL C/F				329	347	676

Symbols used in type of school: C = Classifying. I = Intermediate. S = Senior.

* These schools are now closed but boys were transferred to other appropriate schools.

School	Type	Date Building Craft Training Recognised by B.A.T.C. for Apprenticeship purposes	Crafts in which training is given	Boys transferred to Building Industry		
				Apprenticed	Not Apprenticed	Total
TOTAL B/F				329	347	676
St. Aidan's, Widnes, Lancs.	I	4th June, 1953	Bricklaying; Carpentry and Joinery; Painting and Decorating	10	9	19
St. Christopher's, Hayes, Middx.	S	4th June, 1953	Carpentry and Joinery	2	1	3
*The Boys' School, Offerton, Stockport	I	4th June, 1953	Carpentry and Joinery; Painting and Decorating	5	1	6
St. John's School, Tiffelfield, Towcester	I	4th June, 1953	Bricklaying; Carpentry and Joinery	12	13	25
St. Thomas More, Birkdale, Southport	S	4th June, 1953	Carpentry and Joinery; Painting and Decorating; Bricklaying	7	6	13
Ty Mawr, Gllwern, Abergavenny, Mon.	I	1st January, 1955	Bricklaying; Carpentry and Joinery; Painting and Decorating; Plumbing	4	3	7
Aycliffe, Copelaw, Aycliffe, Darlington	C	1st January, 1955	Bricklaying; Carpentry and Joinery; Painting and Decorating; Plumbing	9	6	15
Herts. Training School, Ware, Herts.	S	1st January, 1955	Bricklaying	3	Nil	3
Netherton Training School, Netherton	S	1st January, 1955	Carpentry and Joinery; Painting and Decorating	2	2	4
TOTAL				383	388	771

Symbols used in type of school: C = Classifying. I = Intermediate. S = Senior.

* These schools are now closed but boys were transferred to other appropriate schools.

School	Type	Date Building Craft Training Recognised by B.A.T.C. for Apprenticeship purposes	Crafts in which training is given	Boys transferred to Building Industry		
				Apprenticed	Not Apprenticed	Total
TOTAL B/F				329	347	676
St. Aldan's, Widnes, Lanes.	I	4th June, 1953	Bricklaying; Carpentry and Joinery; Painting and Decorating	10	9	19
St. Christopher's, Hayes, Middx.	S	4th June, 1953	Carpentry and Joinery	2	1	3
*The Boys' School, Offerton, Stockport	I	4th June, 1953	Carpentry and Joinery; Painting and Decorating	5	1	6
St. John's School, Tiffeld, Towcester	I	4th June, 1953	Bricklaying; Carpentry and Joinery	12	13	25
St. Thomas More, Birkdale, Southport	S	4th June, 1953	Carpentry and Joinery; Painting and Decorating; Bricklaying	7	6	13
Ty Mawr, Gllwern, Abergavenny, Mon.	I	1st January, 1955	Bricklaying; Carpentry and Joinery; Painting and Decorating; Plumbing	4	3	7
Aycliffe, Copelsaw, Aycliffe, Darlington	C	1st January, 1955	Bricklaying; Carpentry and Joinery; Painting and Decorating; Plumbing	9	6	15
Herts. Training School, Ware, Herts.	S	1st January, 1955	Bricklaying	3	Nil	3
Netherton Training School, Netherton	S	1st January, 1955	Carpentry and Joinery; Painting and Decorating	2	2	4
TOTAL				383	388	771

Symbols used in type of school: C = Classifying. I = Intermediate. S = Senior.
 * These schools are now closed but boys were transferred to other appropriate schools.